MINOLTA

The essentials of imaging

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DiMAGE E323

E INSTRUCTION MANUAL

9222-2729-11 SY-A308 ME-0307

BEFORE YOU BEGIN

Thank you for purchasing this Minolta product. Please take the time to read through this instruction manual so you can enjoy all the features of your new digital camera.

Check the packing list before using this product. If any items are missing, immediately contact your camera dealer.

Minolta DiMAGE E323 digital camera
AA alkaline batteries (set of two)
Hand strap HS-DG120
SD Memory Card
Video cable VC-300
USB cable USB-900
DiMAGE Viewer CD-ROM
DiMAGE Instruction Manuals CD-ROM
Quick Reference Guide
Minolta International Warranty Certificate

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FOR PROPER AND SAFE USE

Read and understand the following warnings and cautions for safe use of the digital camera and its accessories.

⚠ WARNING

Using batteries improperly can cause them to leak harmful solutions, overheat, or explode which may damage property or cause personal injury. Do not ignore the following warnings.

- Only use the batteries specified in this instruction manual.
- Do not install the batteries with the polarity (+/–) reversed.
- Do not use batteries which show wear or damage.
- Do not expose batteries to fire, high temperatures, water, or moisture.
- Do not attempt to short or disassemble batteries.
- Do not store batteries near or in metallic products.
- Do not mix batteries of different types, brands, ages, or charge levels.
- Do not charge alkaline or lithium batteries.
- When recharging rechargeable batteries, only use the recommended charger.
- Do not use leaking batteries. If fluid from the batteries enters your eye, immediately rinse the eye with plenty of fresh water and contact a doctor. If fluid from the batteries makes contact with your skin or clothing, wash the area thoroughly with water.
- Tape over battery contacts to avoid short-circuiting during disposal; always follow local regulations for battery disposal.

- Use only the specified AC adapter within the voltage range indicated on the adapter unit. An inappropriate adapter or current may cause damage or injury through fire or electric shock.
- Do not disassemble this product. Electric shock may cause injury if a high voltage circuit inside the product is touched.
- Immediately remove the batteries or unplug the AC adapter and discontinue use if the camera is dropped or subjected to an impact in which the interior, especially the flash unit, is exposed. The flash has a high voltage circuit which may cause an electric shock resulting in injury. The continued use of a damaged product or part may cause injuries or fire.
- Store this product out of reach of children. Be careful when around children not to harm them with the product or parts.
- Do not fire the flash directly into the eyes. It may damage eyesight.
- Do not fire the flash at vehicle operators. It may cause a distraction or temporary blindness which may lead to an accident.
- Do not use the monitor while operating a vehicle or walking. It may result in injury or an accident.
- Do not look directly at the sun or strong light sources through the viewfinder. It may damage your eyesight or cause blindness.
- Do not use this product in a humid environment, or operate this product with wet hands. If liquid enters the product, immediately remove the batteries or unplug the AC adapter and discontinue use. The continued use of a product exposed to liquids may cause damage or injury through fire or electric shock.
- Do not use the product near inflammable gases or liquids such as gasoline, benzine, or paint thinner. Do not use inflammable products such as alcohol, benzine, or paint thinner to clean the product. The use of inflammable cleaners and solvents may cause an explosion or fire.
- When unplugging the AC adapter, do not pull on the power cord. Hold the plug when removing it from an outlet.
- Do not damage, twist, modify, heat, or place heavy objects on the AC adapter cord. A damaged cord may cause damage or injury through fire or electric shock.
- If the product emits a strange odor, heat, or smoke, discontinue use. Immediately remove the batteries taking care not to burn yourself, as batteries become hot with use. The continued use of a damaged product or part may cause injuries or fire.
- Take the product to a Minolta Service Facility when repairs are required.

⚠ CAUTION

- Do not use or store the product in a hot or humid environment such as the glove compartment or trunk of a car. It may damage the product and batteries which may result in burns or injuries caused by heat, fire, explosion, or leaking battery fluid.
- If batteries are leaking, discontinue use of the product.
- The lens retracts when the camera is turned off or the auto-power-off function is activated. Touching the lens barrel while it is retracting may cause injury.
- The camera temperature rises with extended periods of use. Care should be taken to avoid burns.
- Burns may result if the memory card or batteries are removed immediately after extended periods of use. Turn the camera off and wait for it to cool.
- Do not fire the flash while it is in contact with people or objects. The flash unit discharges a large amount of energy which may cause burns.
- Do not apply pressure to the LCD monitor. A damaged monitor may cause injury, and the liquid from the monitor may cause inflammation. If liquid from the monitor makes contact with skin, wash the area with fresh water. If liquid from the monitor comes in contact with the eyes, immediately rinse the eyes with plenty of water and contact a doctor.
- When using the AC adapter, insert the plug securely into the electrical outlet.
- Do not use if the AC adapter cord is damaged.
- Do not cover the AC adapter. A fire may result.
- Do not obstruct access to the AC adapter; this can hinder the unplugging of the unit in emergencies.
- Unplug the AC adapter when cleaning or when the product is not in use.

TABLE OF CONTENTS

The getting up and running section covers how to prepare the camera for use. It contains important information about power supplies and memory cards. Read the data-transfer mode section in its entirety before connecting the camera to a computer.

Many of the features of this camera are controlled with menus. The menu navigation sections concisely describe how to change menu settings. Descriptions of the settings immediately follow the navigation sections.

The appendix contains a troubleshooting section to help answer questions about the operation of the camera. Information covering camera care and storage is also provided. Please store this manual in a safe place.

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The following marks may be found on the product:

CE This mark on your camera certifies that this camera meets the requirements of the EU (European Union) concerning interference causing equipment regulations. CE stands for Conformité Européenne (European Conformity).

This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Digital Camera: DiMAGE E323
FC Tested To Comply With FCC Standards
FOR HOME OR OFFICE USE

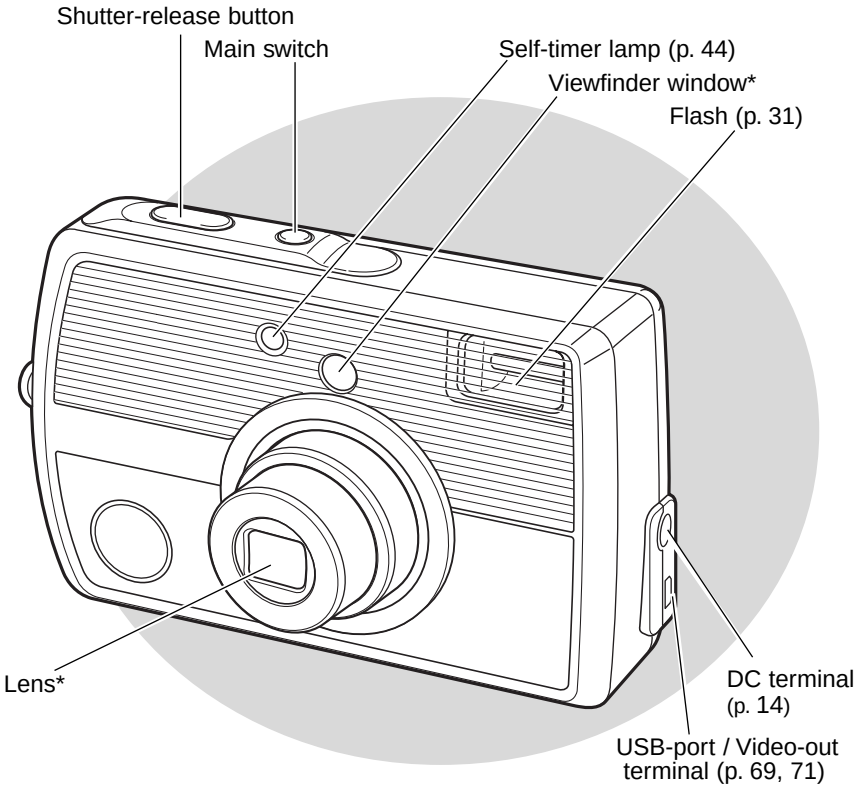
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not approved by the party responsible for compliance could void the user's authority to operate the equipment.
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

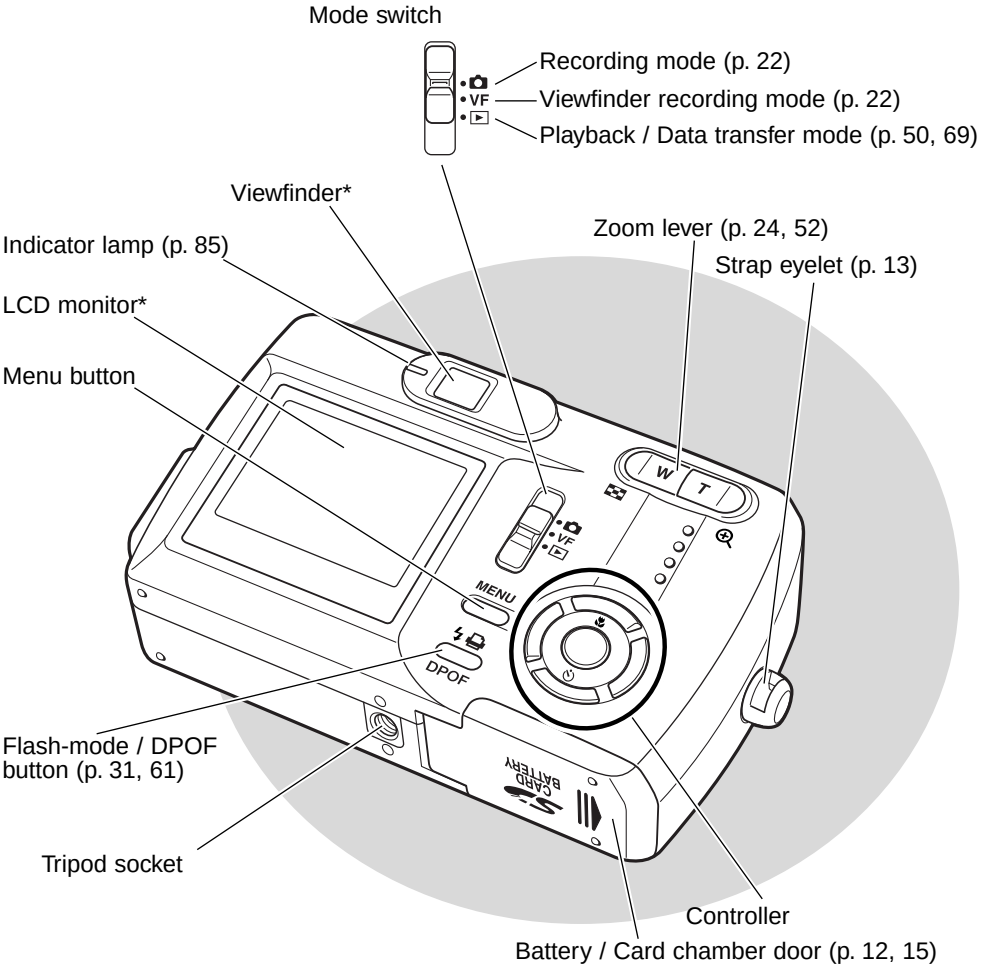
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Tested by the Minolta Corporation 101 Williams Drive, Ramsey, New Jersey 07446, U.S.A.
Do not remove the ferrite cores from the cables.

NAMES OF PARTS

* This camera is a sophisticated optical instrument. Care should be taken to keep these surfaces clean. Please read the care and storage instructions in the back of this manual (p. 87).



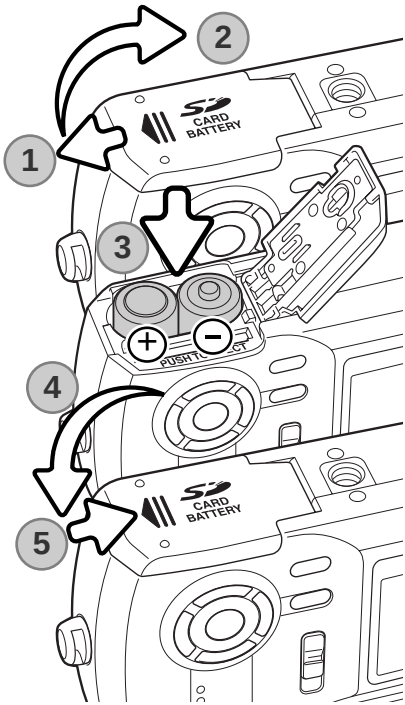

Mode switch
Recording mode (p. 22)
Viewfinder recording mode (p. 22)
Playback / Data transfer mode (p. 50, 69)
Viewfinder*
Indicator lamp (p. 85)
Zoom lever (p. 24, 52)
Strap eyelet (p. 13)
LCD monitor*
Menu button
W
T
MENU
DPOF
Flash-mode / DPOF button (p. 31, 61)
Tripod socket
Controller
Battery / Card chamber door (p. 12, 15)

GETTING UP AND RUNNING

INSTALLING BATTERIES

This digital camera uses two AA-size alkaline or Ni-MH batteries or one CR-V3 lithium battery. Do not use other types of AA-size batteries. When using Ni-MH batteries, fully recharge them with a battery charger suitable for complex electronic equipment. Before using the batteries, read the safety warnings on page 3 of this manual.

When replacing the batteries, the camera should be turned off.



Open the battery-chamber door on the bottom of the camera by sliding the door toward the side of the camera (1) to release the safety catch; the door can then be opened (2).

Insert the batteries as shown (3). Never force the batteries.

Close the battery-chamber door (4) and slide it toward the body (5) to engage the safety catch.

Camera Notes

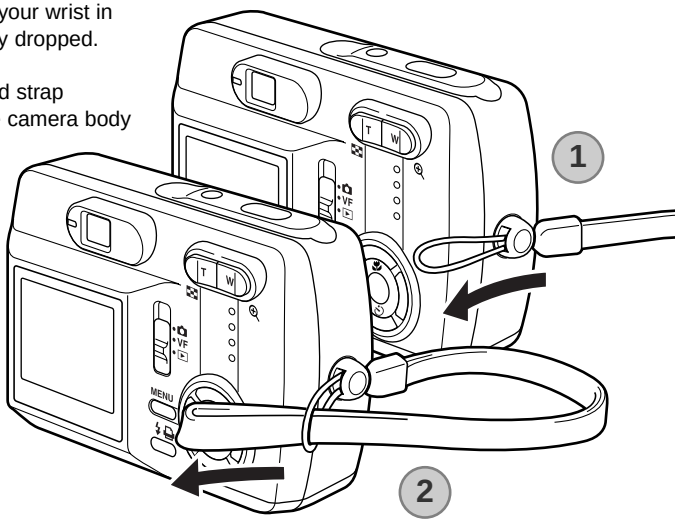
The camera will reset if the batteries are removed for an extended period. An internal battery protects the clock, calendar, and camera settings for about 7 days if the camera is used for at least two days before the batteries are removed.

ATTACHING THE HAND STRAP

Always keep the strap around your wrist in case the camera is accidentally dropped.

Pass the small loop of the hand strap through the strap eyelet on the camera body (1).

Pass the other end of the strap through the small loop and tighten (2).



About Ni-MH batteries

When using Ni-MH batteries, clean both battery terminals with dry cloth to wipe off any dirt or residue. Because of the sophisticated computer system, the camera critically monitors power levels. If the battery terminals are dirty, the camera may give a false battery-condition warning. If battery performance is unusually low, wipe the battery terminals with a clean, dry cloth.

Ni-MH battery performance will decrease if the batteries are often recharged before they have been fully discharged. Completely exhaust the Ni-MH batteries using the camera before charging.

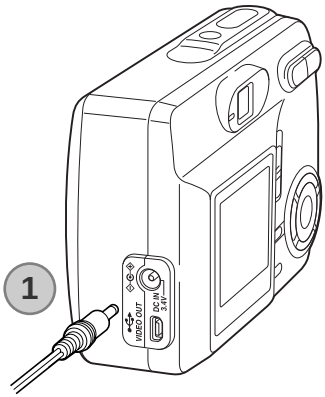
AC ADAPTER (SOLD SEPARATELY)

Always turn off the camera before changing between power supplies.

The AC adapter AC-7 or AC-7E allows the camera to be powered from a household outlet. The AC adapter is recommended when the camera is interfaced with a computer or during periods of heavy use. AC adapter model AC-7 is for use in North America and Taiwan, and AC-7E is for use in all other areas. The batteries cannot be charged using the AC adapter.

Insert the mini plug of the AC adapter into the DC terminal (1).

Insert the AC adapter plug into an electrical outlet.



INSTALLING AND REMOVING A MEMORY CARD

Always turn off the camera and confirm that the orange indicator lamp is not lit before changing the memory card, otherwise the card may be damaged, and data lost.
Every memory card including the supplied card must be reformatted with this camera model before use (p. 20).

An SD (Secure Digital) Memory card or MultiMediaCard must be inserted for the camera to operate.

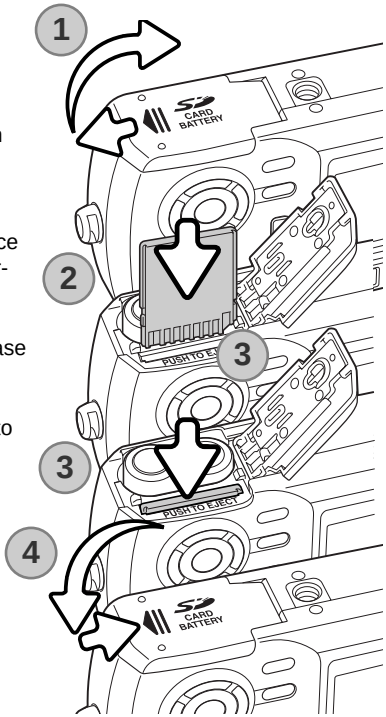
Open the battery-chamber door (1).

Insert the memory card all the way into the card slot and then release (2). The card should catch in the slot.

Insert the card so the face is toward the front of the camera. Always push the card in straight, never at an angle. Never force the card. If the card does not fit, check that it is orientated correctly.

To eject a memory card, press the card into the slot and release (3). The card can now be pulled out.

Close the battery-chamber door and slide it toward the body to engage the safety catch (4).

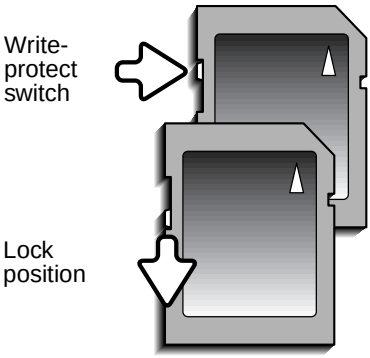


ABOUT MEMORY CARDS

The response time during recording and playback is longer with MultiMediaCards compared with SD Memory Cards. This is not a defect, but rather due to the specifications of the cards. When using large capacity cards, some operations like erasing may take longer.

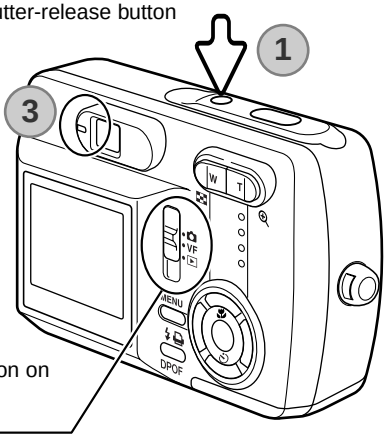
The SD Memory Card has a write-protect switch to prevent image data from being erased. By sliding the switch to the bottom of the card, the data will be protected. However, when the card is protected, images cannot be recorded. If an attempt is made to record or erase an image with the camera, the card-protected message will appear and the LED lamps near the viewfinder will turn red and blink. For memory card care and store see page 88.

When a card is reformatted, all the data on the card is permanently erased.



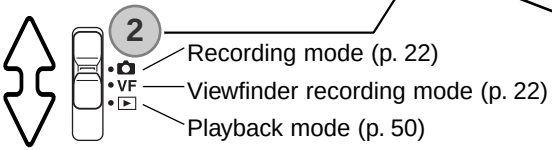
TURNING POWER ON

Turn the camera on by pressing the main switch near the shutter-release button (1).



Setting to the recording mode

To capture images, slide the mode switch to the recording position or viewfinder recording position (2). The lens cover opens and at first the red indicator lamp blinks, and then the green indicator lamp glows steadily (3). Set to the recording position when using the LCD monitor; an image appears on the monitor when you set to this position. Set to the viewfinder recording position when using the viewfinder; this position will help conserve battery power. Using the menu button and controller, select the drive mode from single-frame advance, continuous advance, or movie recording. See recording section on page 22 for details.



Setting to the playback mode

Captured images can be viewed in the playback mode. Slide the mode switch to the playback position. Select the playback mode from single-frame, continuous advance, or movie clips (p. 50).

Setting to the setup mode

The setup mode is used to control the camera's operation. You can access the setup mode in either the recording or playback mode (p. 64).

Turning power off

After using the camera, turn the camera off by pressing the main switch.

BATTERY-CONDITION INDICATOR

This camera is equipped with an automatic battery-condition indicator displayed on the LCD monitor.



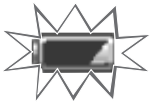
Full-battery icon - the batteries are fully charged. This icon is displayed when the recording or playback menu is displayed.



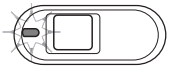
Half-full battery icon - the batteries are partially charged. This icon is displayed when the recording or playback menu is displayed.



Low-battery warning glows steadily - battery power is very low. The batteries should be replaced as soon as possible. This warning automatically appears.



Low-battery warning blinks while you press the shutter-release button - the shutter will not release.

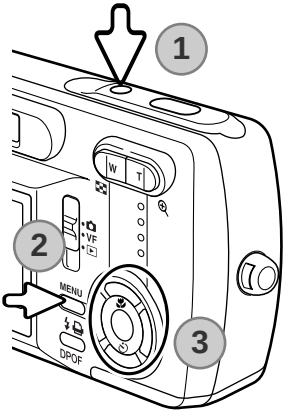


If power is insufficient for camera operation, the indicator lamp next to the viewfinder will turn red. The shutter will not release. The batteries must be replaced.

AUTO POWER SAVE

To conserve battery power, the camera will turn off displays if an operation is not made within several minutes. To restore power, press the main switch, shutter-release button, menu button or the central button of the controller. The length of the auto-power-save period can be changed in the setup mode (p. 64). When the camera is connected to a computer, the auto-power-save does not work; the camera will shut down automatically after 12 hours.

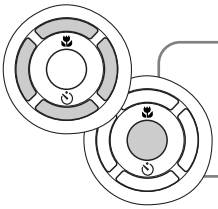
SETTING THE LANGUAGE



For customers in certain areas, the menu language must also be set.

Turn the camera on (1) and press the menu button to display the function menu (2). Use the up/down and left/right keys of the controller to highlight the setup mode at the top line of the menu options (3).





The up/down and left/right keys of the controller move the cursor.
The central button of the controller selects menu options and sets adjustments.

Press the central button to set the setup mode.
Use the up/down keys to highlight the language option.
Press the central button to display the language settings.



Using the up/down keys, highlight the desired language.
Press the central button to select; the setup menu will be displayed in the selected language.



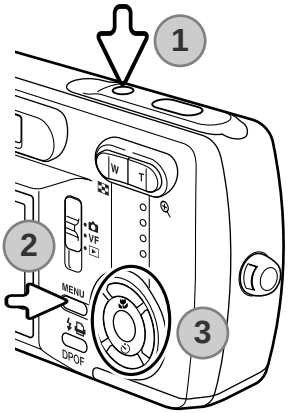
To exit the setup mode, select another mode options at the top line of the menu and press the central button.

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REFORMATTING A MEMORY CARD

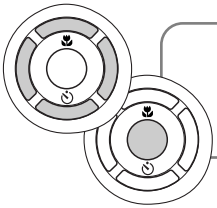
The memory card including the supplied card must be reformatted with this camera before use. When a memory card is reformatted, all data on the card will be erased. If the memory card is used in another device it should be formated by the camera before subsequent usen having first transfered valuable data to a computer.

The reformatting function is used to erase all data on a memory card. When using a memory card which has already been used in another digital camera or a computer, copy the data to a computer or storage device before reformatting the memory card. Protecting images will not protect them from being erased when the card is reformatted. Always reformat the memory card using this camera; never use a computer to reformat a card.



Turn the camera on (1) and press the menu button to display the function menu (2). Use the up/down and left/right keys of the controller to highlight the setup mode at the top line of the menu options (3).





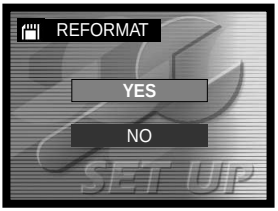
The up/down and left/right keys of the controller move the cursor.
The central button of the controller selects menu options and sets adjustments.

Press the central button to set the setup mode.
Use the up/down keys to highlight “Reformat”.
Press the central button to display the reformat screen.



Using the up/down keys, highlight “YES”.
Press the central button to reformat the memory card.

To exit the setup mode, select another mode option on the top line of the menu and press the central button.

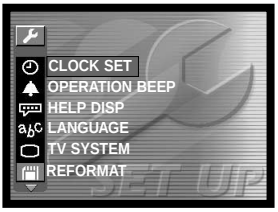


SETTING THE CLOCK

The camera’s clock and calendar must be set in the setup menu. When images are recorded, the image data is saved with the date and time of recording.

Turn the camera on (1) and press the menu button to display the function menu (2). Use the up/down and left/right keys of the controller to highlight the setup mode at the top line of the menu options (3).

Press the central button to access the setup mode.
Use the up/down keys to highlight “Clock set”.
Press the central button to display the clock set screen.

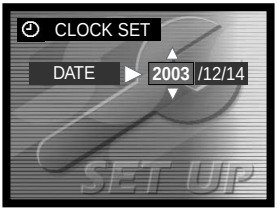




Use the up/down and then left/right keys to highlight the item to be changed. You can select the date format in “DISP” (p. 66).

Use the up/down keys to adjust the item. Press the central button to set the item.

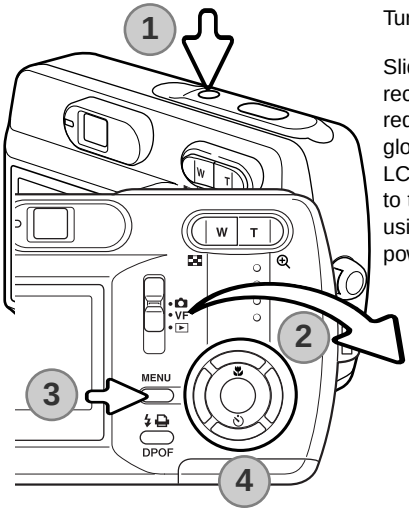
Select “EXIT” to exit the clock screen.



RECORDING MODE

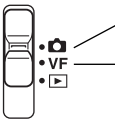
To prepare the camera for use, read pages 12 through 21.

SETTING THE CAMERA TO RECORD IMAGES



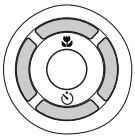
Turn the camera on (1).

Slide the mode switch to the recording position or viewfinder recording position (2). The lens cover opens and at first the red indicator lamp blinks, and then the green indicator lamp glows steadily. Set to the recording position when using the LCD monitor; an image appears on the monitor when you set to this position. Set to the viewfinder recording position when using the viewfinder; this position will help conserve battery power.

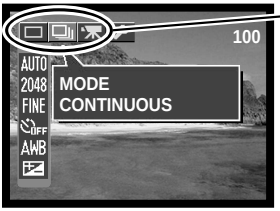




Press the menu button to display the recording menu (3).



Using the up/down and left/right keys of the controller (4), highlight the desired drive mode. The drive mode menu is on the top line of the menu.



Drive modes



Single-frame advance (p. 26)

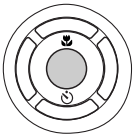


Continuous advance (p. 33)



Movie recording (p. 34)





Press the central button of the controller to set the drive mode. To return to the normal display, press the menu button.

HANDLING THE CAMERA

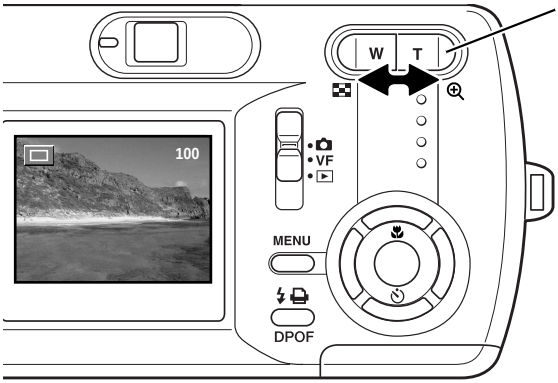
While using the viewfinder or LCD monitor, grip the camera firmly with your right hand while supporting the camera body with your left. Keep your elbows at your side and your feet shoulder-width apart to hold the camera steadily.

When taking vertical pictures, hold the camera so that the flash is above the lens with the shutter-release button to the top. Take care not to cover the lens with your fingers or the strap.



USING THE ZOOM LENS

This camera is equipped with a 5.6 - 16.8mm zoom lens. This is equivalent to a 36 to 108mm lens on a 35mm camera. The lens is operated by the zoom lever at the back of the camera. The effect of the optical zoom is visible in both the viewfinder and LCD monitor.

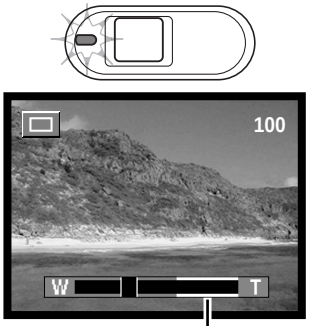


The zoom lens is operated by the zoom lever. Pressing the right side (T) will zoom in to the telephoto position of the lens. Pressing the left side (W) will zoom out to the wide-angle position. The optical zoom position is indicated by the scale at the bottom of the LCD monitor.

If the zoom lever is pressed toward the telephoto position at the telephoto position of the optical zoom, the digital zoom will activate; this is indicated by the right yellow range of the zoom scale and the green blinking indicator lamp. The digital zoom extends the power of the telephoto position of the optical zoom by up to 4X.

Digital zoom cannot be used in the viewfinder recording mode or at the 2880 X 2160 resolution setting.

Digital zoom images are interpolated to the set image size. There can be some loss of quality with images taken with the digital zoom.



Digital zoom range (yellow)

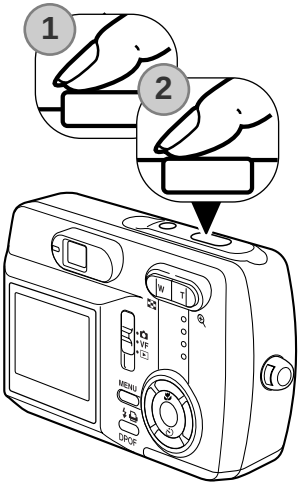
Shooting tips

The zoom lens not only affects how large the subject is in the picture, but it also influences the depth of field and perspective. Depth of field is the area between the closest object in focus and the furthest object in focus. As the lens zooms in to the telephoto position, the depth of field becomes shallower, separating the subject from the background. Many portraits are taken with telephoto lenses. Zooming the lens out to the wide-angle position makes both the foreground and background appear sharper. Usually landscape photographs take advantage of the large depth of field of wide-angle lenses. Wide-angle lenses also create a strong perspective which gives a sense of depth in the image. Telephoto lenses compress the space between the subject and background and create a weak perspective.

SINGLE-FRAME ADVANCE RECORDING MODE

See page 22 to set the single-frame advance mode.

Place the subject within the LCD monitor or viewfinder. The focus range is 50cm (1.6ft) to infinity. Both the LCD monitor and viewfinder can be used to frame the subject. However, because of parallax, only the monitor's live image will be accurate with subjects closer than 1m (3ft.) at the zoom lens' wide-angle position or 3m (10ft) at the telephoto position. The focus-lock function can be used (p. 28).

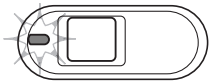


Press the shutter-release button partway down (1) to lock the focus and exposure.



- The focus signal and focus frame will appear on the monitor to show the image is in focus. If they do not appear, the camera was unable to focus on the subject. Repeat the previous steps until they appear on the monitor. The shutter can be released regardless of whether the camera can focus on the subject or not.

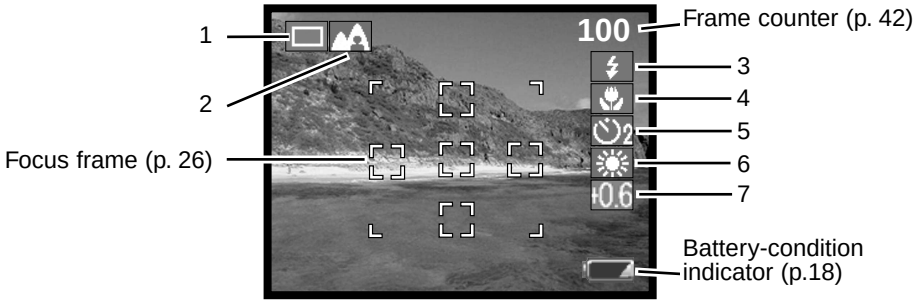
Press the shutter-release button all the way down (2) to take the picture.



- After the shutter releases, the indicator lamp next to the viewfinder will turn orange indicating image data is being written to the memory card. Never remove a memory card while data is being transferred.

The image can be previewed after it is captured by pressing the central button of the controller.

LCD MONITOR DISPLAY



1 Single-frame advance (p. 26)
Continuous advance (p. 33)
Movie recording (p. 34)
Focus signal (p. 26)
Camera-shake warning (p. 32)

2 Scene selection (p. 40)
Full auto (no indicator)
Sports
Portrait
Landscape
Night view
Cosmetic
Slim

3 Flash modes (p. 31)
Autoflash
Fill flash
Flash cancel
Red-eye reduction

4 Focus modes (p. 30)
Autofocus (no indicator)
Macro
Landscape

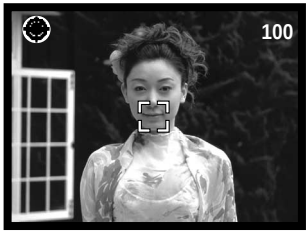
5 Self-timer (p. 44)
Self-timer cancel (no indicator)
Self-timer (2 sec. delay release)
Self-timer (10 sec. delay release)

6 White balance (p. 45)
Auto white balance (no indicator)
Sunny
Cloudy
Fluorescent
Incandescent

7 Exposure compensation (p. 46)

FOCUS LOCK

Focus lock may also be used when a special focusing situation prevents the camera from focusing on the subject. This function is controlled with the shutter-release button.



Place the subject within the monitor. Press and hold the shutter-release button partway down to lock the focus.

- The focus signal and focus frame will appear on the monitor to show the image is in focus.



Without lifting your finger from the shutter-release button, recompose the subject within the image area. Press the shutter-release button all the way down to take the picture.

Camera Notes

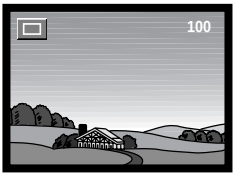
Every time a still image is recorded, it is stored with an exif tag that contains the date and time of recording as well as shooting information. This information can be viewed on a computer with the DiMAGE Viewer software.

SPECIAL FOCUSING SITUATIONS

The camera may not be able to focus in certain situations. In these situations the focus-lock function (p. 28) can be used to focus on another object at the same distance as your main subject, and then the image can be recomposed to take the picture.



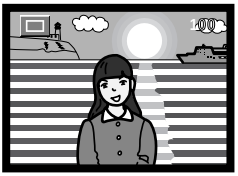
The subject is too dark.



The subject in the focus frame is low in contrast.



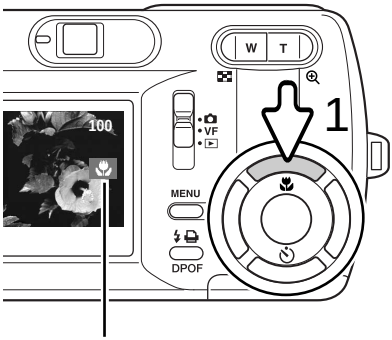
Two subjects at different distances overlap in the focus frame.



The subject is near a very bright object or area.

FOCUS MODES

Focus mode enable you to override the autofocus for certain types of picture. The focus mode can be used in full auto in the scene selection in all the recording modes, and the slim mode in the single-frame advance mode (p. 40).



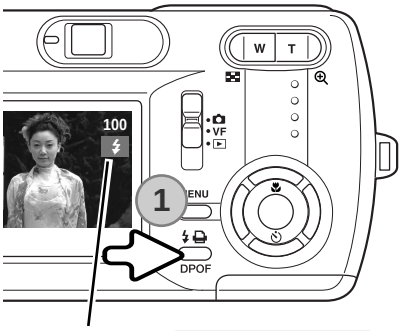
No indicator	Autofocus
	Macro
	Landscape

To set the focus mode, simply press the up key of the controller (1) until the desired mode is displayed. The focus mode setting will remain in the recording mode you set until it is changed.

Macro - used for close-up photography between 11cm (4.3in.) and 50cm (19.7in.) from the front of the lens at the wide-angle position, and 50cm (19.7in.) at the telephoto position. Because of parallax, the LCD monitor should be used to compose the picture.

Landscape - focus distance is set to infinity to produce sharp landscapes.

FLASH MODES



A	Autoflash
	Fill-flash
	Flash cancel
	Autoflash with red-eye reduction

The flash can be used when taking images in the single-frame advance recording mode. To select the flash mode, press the flash-mode button (1) on the back of the camera until the desired mode is displayed. The active flash mode is displayed near the top right corner of the LCD monitor. The flash mode setting will remain until it is changed. While the flash is charging, the shutter cannot be released.

Autoflash - the flash fires automatically in low-light and backlit conditions. When the shutter-release button is pressed partway down, the indicator will appear if the flash will fire.

Fill-flash - the flash fires with each exposure regardless of the amount of ambient light. Fill-flash can be used to reduce harsh shadows caused by strong direct light or sunshine.



Flash cancel - the flash will not fire. Use flash cancel when flash photography is prohibited, natural light is desired to illuminate the subject, or the subject is beyond the flash range. The camera-shake warning may appear when flash cancel is selected (p. 32).

Autoflash with red-eye reduction - the flash fires multiple bursts before the main flash burst to reduce red-eye; an effect caused by light reflected from the retina. Use in low-light conditions when taking photographs of people or animals; the pre-flashes contract the pupils of the subject's eyes.

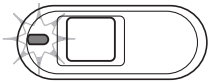
FLASH RANGE

The camera automatically controls the flash output. For well-exposed images, the subject must be within the flash range. Because of the optical system, the flash range is not the same at the lens' wide-angle position as it is at the telephoto position.

Wide-angle position	Telephoto position
0.11m ~ 3.0m (0.4ft. ~ 9.8ft.) from the front of the lens	0.5m ~ 1.7m (1.6ft. ~ 5.6ft.) from the front of the lens

FLASH SIGNALS

The indicator lamp next to the viewfinder indicates the status of the flash. When the lamp is red and blinks, the flash is charging and the shutter will not release. When the lamp turns green, the flash is charged and ready to fire.



CAMERA-SHAKE WARNING



If the shutter speed falls below the point where the camera can be hand held safely, the camera-shake warning indicator will appear on the monitor. Camera shake is slight blurring caused by subtle hand motion and is more pronounced at the telephoto position of the lens than at the wide-angle position. Although the warning appears, the shutter can still be released. If the warning appears, place the camera on a tripod or use the built-in flash.

CONTINUOUS ADVANCE RECORDING MODE

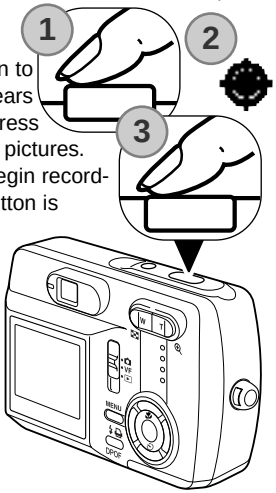


See page 22 to set the continuous advance recording mode.

The continuous-advance drive mode allows a series of images to be captured while holding down the shutter-release button. There are two continuous advance methods: standard and best select. See page 48 for details of the best select method.

Set the standard continuous advance mode (p. 35). The “STD” indicator will display on the right side of the LCD monitor. The number of images that can be captured at one time and the rate of capture depend on the compression and resolution setting, see the chart below.

Compose the picture and press the shutter-release button partway down to lock the exposure and focus for the series (1). The focus signal (2) appears in the top left corner of the LCD monitor when the focus is confirmed. Press and hold the shutter-release button all the way down (3) to begin taking pictures. When the shutter-release button is pressed and held, the camera will begin recording images until the maximum number has been taken or the shutter button is released. The built-in flash cannot be used. The frame counter is adjusted after the series has been taken while the images are being saved.



The chart lists the maximum number of images that can be captured with different compression and resolution combinations.

Resolution / Compression	2048 X 1536	1600 X 1200	640 X 480
Fine	9	14	81
Normal	13	21	99

MOVIE RECORDING MODE

See page 22 to set the movie recording mode.

This camera can record digital video. Total recording time varies with the resolution and the memory card capacity. Audio recording is not available.

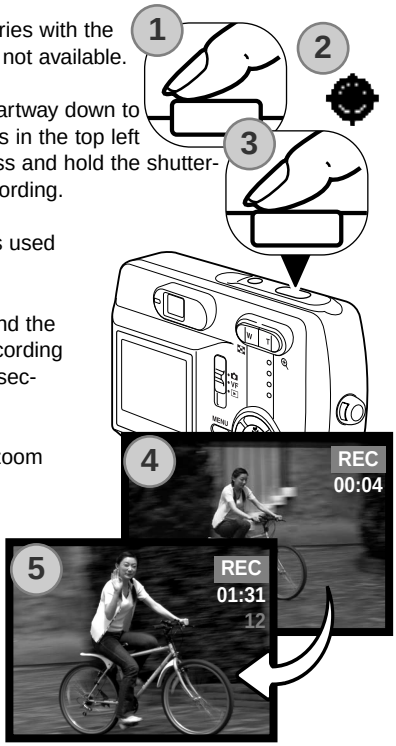
Compose the picture and press the shutter-release button partway down to lock the exposure and focus (1). The focus signal (2) appears in the top left corner of the LCD monitor when the focus is confirmed. Press and hold the shutter-release button all the way down (3) and release to begin recording.

The camera will continue to record until the recording time is used or the shutter-release button is pressed again.

When recording, the recording indicator “REC” will appear and the frame counter will display the elapsed time (4). When the recording time is almost up, the rec counter will display the remaining seconds (5).

While recording, the focus is locked. The optical and digital zoom can be used during the movie recording.

The writing speed of the memory card in use may prevent an entire movie clip from being recorded.



NAVIGATING THE RECORDING MENU

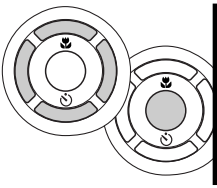
Navigating the menu is simple. The menu button turns the menu on and off. The left/right and up/down keys of the controller control the cursor and change settings on the menu. Pressing the central button of the controller selects menu options and sets adjustments. The camera will remain in the recording mode you set until it is changed.

Turn the camera on and slide the mode switch to the recording position (P. 22). Press the menu button to activate the recording menu.

MENU



Using the up/down and left/right keys of the controller, highlight the desired drive mode on the top line of the menu options. Press the central button to set the drive mode.





Press the menu button to display the recording menu in the desired drive mode. Use the up/down keys to highlight the desired menu option, and the left/right key to highlight the desired setting.



Press the central button of the controller to select the highlighted setting.

Once a setting has been selected, the cursor will return to the menu options and the new setting will be displayed. You can continue to make further changes. Press the menu button to exit the recording menu display.



SINGLE-FRAME ADVANCE RECORDING MENU



1 Mode

- Single-frame advance (p. 26)*
- Continuous advance (p. 33)
- Movie recording (p. 34)
- Setup (p. 64)

2 Scene selection (p. 40)

- Full auto*
- Sports
- Portrait
- Landscape
- Night view
- Cosmetic
- Slim

3 Resolution (p. 42)


2880 x 2160


2048 x 1536*


1600 x 1200


640 x 480

4 Compression (p. 42)


Fine*


Normal

5 Self-timer (p. 44)


Self-timer cancel*


Self-timer (2 second delay)


Self-timer (10 second delay)

6 White balance (p. 45)


Auto white balance*


Sunny


Cloudy


Fluorescent


Incandescent

7 
Exposure compensation (p. 46)

8 Frame counter (p. 42)

9 Help display (p. 66)

10 Battery-condition indicator (p. 18)

** Default setting*

CONTINUOUS ADVANCE RECORDING MENU



1 Mode
- Single-frame advance (p. 26)
- Continuous advance (p. 33)
- Movie recording (p. 34)
- Setup (p. 64)

2 Scene selection (p. 40)
- AUTO Full auto*
- Sports
- Portrait
- Cosmetic
- Slim

3 Continuous advance recording method
- BEST Best select (p. 48)*
- STD Standard (p. 33)

4 Resolution (p. 42)
- 2048 2048 x 1536*
- 1600 1600 x 1200
- 640 640 x 480

5 Compression (p. 42)
- FINE Fine*
- NORM Normal

6 White balance (p. 45)
- AWB Auto white balance*
- Sunny
- Cloudy
- Fluorescent
- Incandescent

7 Exposure compensation (p. 46)

8 Frame counter (p. 42)

9 Help display (p. 66)

10 Battery-condition indicator (p. 18)

** Default setting*

MOVIE RECORDING MENU



1 Mode
- Single-frame advance (p. 26)
- Continuous advance (p. 33)
- Movie recording (p. 34)
- Setup (p. 64)

2 Scene selection (p. 40)
- Full auto*
- Sports
- Portrait
- Cosmetic

3 Resolution (p. 42)
- 320 320 x 240*
- 160 160 x 120

4 White balance (p. 45)
- AWB Auto white balance*
- Sunny
- Cloudy
- Fluorescent
- Incandescent

5 Exposure compensation (p. 46)

6 Recording time (p. 42)

7 Help display (p. 66)

8 Battery-condition indicator (p. 18)

** Default setting*

SCENE SELECTION

The active subject program will be indicated at the right of the recording mode indicator. Full auto indicator will not be displayed. The subject program will remain in effect until it is changed or the recording mode is changed to another.

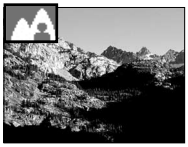




SPORTS - optimized to stop action.



PORTRAIT - a slight defocusing of the background separates the subject from the background. Most portraits look best at a telephoto setting; longer focal lengths do not exaggerate facial features and the shallower depth of field softens the background. The focus is set to around 2.5m (8.2ft.).



LANDSCAPE - optimized to produce sharp, colorful landscapes.



NIGHT VIEW - the flash and ambient exposures are balanced to reveal the subject and background in low light. Set the flash mode to fill-flash (p. 31). Ask your subject not to move after the flash burst; the shutter may still be open for the background exposure. Because the shutter speed may be slow, the use of a tripod is recommended. The focus is set to around 2.5m (8.2ft.).

COSMETIC - optimized to reproduce soft skin tones. The focus is set to around 2.5m (8.2ft.).

SLIM - changes the vertical or horizontal proportions of the subject with the digital zoom. 2880 x 2160 resolution setting cannot be used.

Select the slim mode from the scene selection, then press the central button of the controller. Again press the central button and then use the up/down and/or left/right keys to change the vertical or horizontal proportions of the subject. The up/down keys magnify the image vertically. The left/right keys magnify the image horizontally. The maximum magnification is approx 4X.



RESOLUTION AND COMPRESSION RATE SETTINGS

The resolution and compression rate must be set before the picture is taken. The resolution and compression must be reset manually.

Changing the resolution affects the number of pixels in each image. The greater the resolution, the larger the file size. Choose the resolution based on the final use of the image - smaller resolution will be more suitable for web sites whereas larger resolution will produce higher quality prints. The available resolution settings differ according to the recording modes.

The compression has no effect on the number of pixels in the image. The lower the rate of compression, the higher the image quality and the larger the file sizes. The fine and normal images are both formatted as a JPEG file. The compression settings cannot be selected in the movie recording. If economical use of the memory card is important, use the normal mode.

If the resolution and compression are changed, the frame counter will display the approximate number of images that can be recorded at that setting on the installed memory card. One memory card can contain images with differing sizes and qualities. The number of images that can be stored on a memory card is determined by the size of the card and the file size of the images. The actual file size is determined by the scene; some subjects can be compressed further than others.

At the 2880 X 2160 resolution setting, the camera process the captured image initially to produce a 2880 X 2160-pixel image; it takes approx. 4 seconds to record the data after the shutter-release button is pressed all the way down.

Camera Notes

The frame counter indicates the approximate number of images that can be stored on the memory card at the camera's current resolution and compression settings. If the settings are changed, the frame counter adjusts accordingly. Because the counter uses approximate file sizes, the actual image taken may not change the counter or may decrease it by more than one. When the frame counter displays zero, it indicates that no more images can be captured at the current resolution and compression settings. Changing the settings may allow more images to be saved to the card.

The resolution and compression setting available for the recording modes

		2880 X 2160 (6M)	2048 X 1536 (3M)	1600 X 1200 (2M)	640 X 480 (0.3M)	320 X 240	160 X 120
Single-frame advance	Fine	Yes	Yes	Yes	Yes	Not available	Not available
	Normal	Yes	Yes	Yes	Yes	Not available	Not available
Continuous advance	Fine	Not available	Yes	Yes	Yes	Not available	Not available
	Normal	Not available	Yes	Yes	Yes	Not available	Not available
Movie recording		Not available	Not available	Not available	Not available	Yes	Yes

Approximate number of images that can be stored on a 16MB memory card.

	2048 X 1536	1600 X 1200	1280 X 960	640 X 480
Fine	6 frames	13 frames	21 frames	111 frames
Normal	10 frames	20 frames	33 frames	148 frames
Movie recording	45 seconds with 320 x 240 resolution settings 2 minutes 38 seconds with 160 x 120 resolution settings			

SELF-TIMER



The self-timer will delay the release of the shutter for approximately two or ten seconds after the shutter-release button is pressed. This function can be used in the single-frame advance recording mode.

When the mode is set, the indicator will be displayed at the right side on the LCD monitor (1).



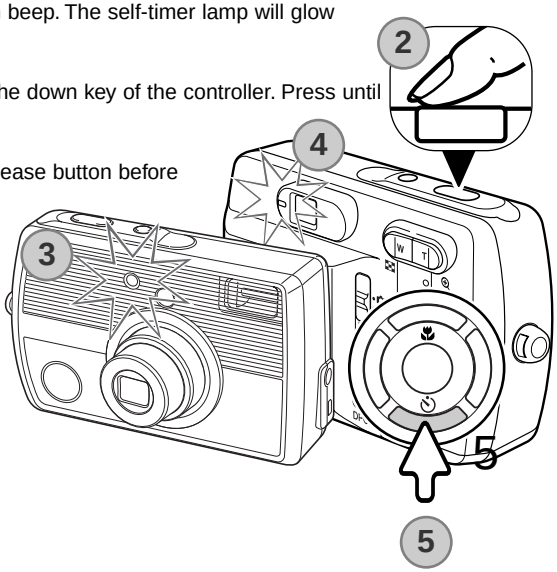
With the camera on a tripod, compose the picture. Focus lock cannot be used. Press the shutter-release button all the way down to begin the countdown (2). Because focus and exposure are determined when the shutter-release button is pressed, do not stand in front of the camera when setting up a self-timer image.

During the ten second countdown, the self-timer lamp on the front of the camera (3) will start to blink slowly. The red indicator lamp (4) next to the viewfinder will glow steadily.

A few seconds before the exposure, the self-timer lamp will blink rapidly. The indicator lamp blinks slowly, and is accompanied by the operation beep. The self-timer lamp will glow steadily just before the shutter fires.

You can also set the self timer by pressing the down key of the controller. Press until the desired mode is displayed.

To stop the countdown, press the shutter-release button before exposure. Press the shutter-release button again to restart.

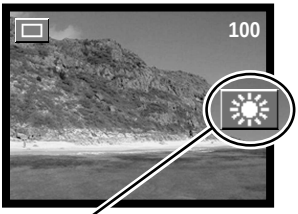


WHITE BALANCE

White balance is the camera's ability to make different types of lighting appear neutral. The effect is similar to selecting daylight or tungsten film, or using color compensating filters in conventional photography. One automatic and four preset white-balance settings are available in all recording modes.

The automatic white balance compensates for the color temperature of a scene. In most cases, the auto setting will balance the ambient light and create beautiful images, even under mixed-lighting conditions. When the built-in flash is used, the white balance is set for the color temperature of the flash.

Preset white-balance settings must be set before the image is taken. When one of the preset white-balance settings is selected, an indicator will be displayed on the LCD monitor to indicate the active white-balance setting. When Autofocus is set, no indicator is displayed. The effect is immediately visible on the monitor. To record the ambient light, set the flash mode to flash cancel (p. 31). The built-in flash can be used with preset white-balance, but will create a pinkish or blueish cast with the fluorescent and tungsten settings. The flash is daylight balanced and will produce good results with the daylight and cloudy settings.





Sunny - for outdoor and sunlit subjects.



Cloudy - for overcast outdoor scenes.



Fluorescent - for fluorescent lighting: office ceiling lights.

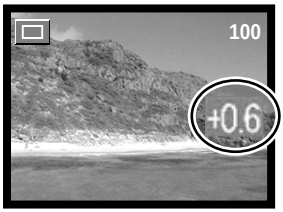


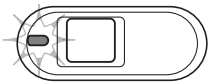
Incandescent - for incandescent lighting: household filament light bulbs.

EXPOSURE COMPENSATION

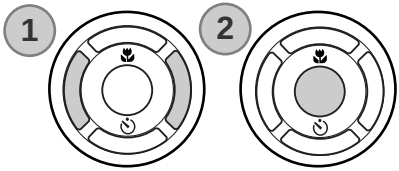
The camera exposure can be adjusted to make the final picture lighter or darker by as much as ±1.8Ev in 0.3 increments with all recording modes. The exposure-compensation value will remain in the recording mode you set until it has been reset.

The exposure compensation must be set before the image is captured. To set the exposure compensation, the monitor must be on. When you highlight the exposure compensation option, the exposure compensation bar appears. Adjust with the left/right keys of the controller. Press the central button to set. The change in exposure is visible in the monitor image. When set to any value other than 0.0, the value will remain on the LCD monitor and the green indicator lamp next to the viewfinder will blink as a warning.





Exposure compensation can also be adjusted with the left/right keys of the controller (1). Press the central button to set (2).





Exposure compensation is canceled in the following cases; when the recording mode is changed/ when the camera is set to the playback mode/ when the camera is connected to the computer/ when the power is turned off.

Shooting tips

Sometimes the camera's exposure meter is deceived by certain conditions. Exposure compensation can be used in these situations. For example, a very bright scene, such as a snowy landscape or a white sandy beach, can appear too dark in the captured image. Before taking the



Calculated camera exposure



–1.0Ev



–1.8Ev

picture, adjusting the exposure by +1 or +1.8 EV will result in an image with normal tonal values.
In the example above, the dark water caused the camera to overexpose the image making it bright and washed-out. By compensating the exposure, detail is brought out in the leaves, and the stones and water appear richer.

Ev stands for exposure value. A change of one Ev will adjust the exposure calculated by the camera by a factor of two.

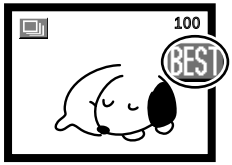
+1.8 Ev	3.2X as much light
+0.9 Ev	1.6X as much light
0.0 Ev	Calculated exposure
–0.9 Ev	1/1.6 as much light
–1.8 Ev	1/3.2 as much light

CONTINUOUS ADVANCE RECORDING METHOD

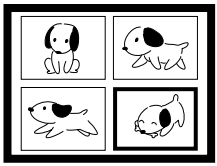
BEST In this page, the function and operation of the best select method are described. See page 33 for the standard continuous advance recording.

With the best select method, you can save the best image out of four sequential images.
All four images can be saved if you want.

Set the camera to the best select mode (p. 35). The “BEST” indicator displays on the right side of the LCD monitor. Compose the picture and press the shutter-release button partway down to lock the exposure and focus for the series. The focus signal appears in the top left corner of the LCD monitor when the focus is confirmed. Press the shutter-release button all the way down and release to begin recording. The built-in flash cannot be used.



After the images are captured, the four-image display will appear. Using the up/down and left/right keys of the controller, select the image you want to save. When the desired image is highlighted with the orange frame, press the central button of the controller.



The selected image will be displayed in the full screen and a confirmation screen “SAVE IMAGE ERASE OTHERS” will appear. You can change the image using the left/right keys. Select “YES” and press the central button to save the image. The image will be saved in the single-frame advance folder and the other images will be erased.



If you want to save all four images, press the menu button when the four-image display appears, or select “EXIT” in the confirmation screen and press the central button. All the images will be saved in the continuous advance folder.

When capturing images in the viewfinder recording mode, the four-image display will not appear; all four images will be saved in the continuous advance folder.

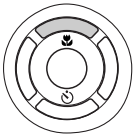
INSTANT PLAYBACK

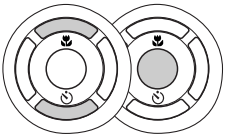
In all the recording modes, the last image can be displayed for a while by simply pressing the central button of the controller. You can also erase the image in the instant playback.



Using the left/right keys of the controller, you can scroll through the images on the memory card. The images can be enlarged with the zoom lever. To erase the image in the single-frame advance instant playback, press the up key of the controller. A confirmation screen will appear. Using the up/down keys of the controller, highlight “YES” and then press the central button. Highlight “EXIT” to cancel the operation.







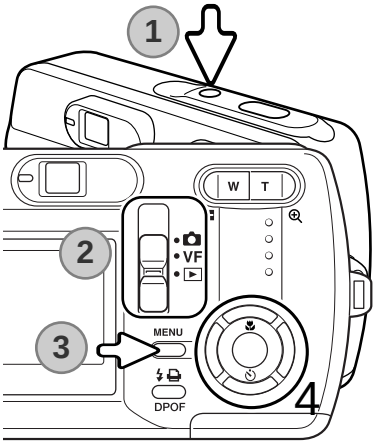


To erase a series of images in the continuous advance or a series of movie clips, press the up key of the controller. The playback will be paused. Again press the up key. A confirmation screen will appear. Using the up/down keys of the controller, highlight “YES” and then press the central button. Highlight “EXIT” to cancel the operation.

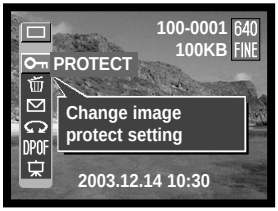
The other method of instant playback for the single-frame advance mode is by simply continuing to hold down the shutter-release button after taking the picture. Release the shutter-release button to end the playback. This function is disabled if the monitor is turned off.

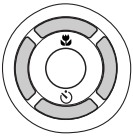
PLAYBACK MODE

SETTING THE CAMERA TO PLAYBACK MODE

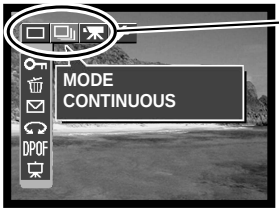


Turn the camera on (1). Slide the mode switch to the playback position (2). Press the menu button to display the playback menu (3).





Using the up/down and left/right keys of the controller (4), highlight the desired drive mode. The drive mode menu is on the top line of the menu.



Drive modes



Single-frame advance

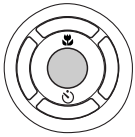


Continuous advance



Movie

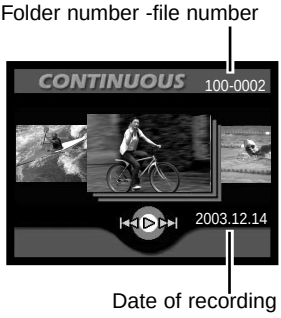
Press the central button of the controller to set the drive mode. To return to the normal display, press the menu button.



BASIC PLAYBACK OPERATION

In the single-frame advance mode, using the left/right keys of the controller, scroll through the images on the memory card.

In the continuous advance mode, press the left/right keys to scroll through the continuous advance image folders. Press the central button to start the playback. Press the up key to pause the playback. To display the previous/next image, press the left/right key. Press the central button to restart. To exit the playback, press the down key.



In the movie mode, press the left/right keys to scroll through the movie clips. Press the central button to start the playback. Press the left/right key to rewind/fast forward the playback. You can rewind/forward faster if you press the left/right key again while rewinding/fast forwarding. Press the up key to pause the playback. Press the central button to restart. To view one of the images in the movie clip, press the right button while the playback is paused. To view in reverse order, press the left button. To exit the playback, press the down key.



You can view movie clips on your computer using Quick Time included on the CD-ROM.

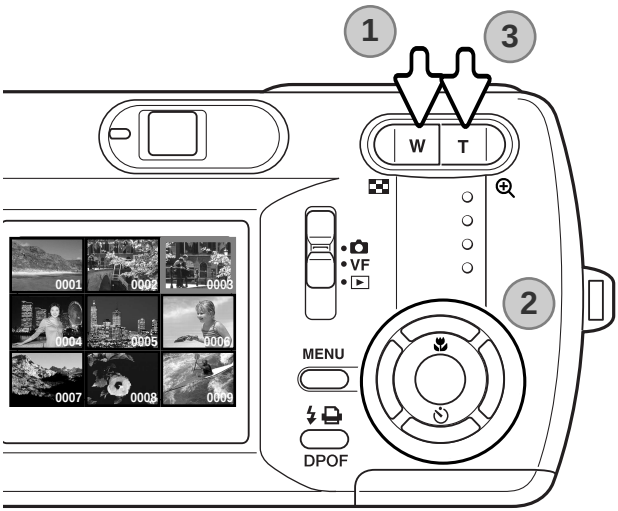
INDEX PLAYBACK

Press the left side of the zoom lever (1) to display the index playback. In the index playback, the left/right and up/down keys of the controller (2) move the orange border around the index thumbnails.

In the single-frame advance mode, a thumbnail image can be displayed in the full screen by pressing the central button of the controller.

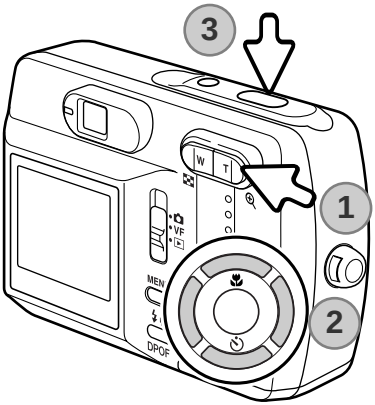
In the continuous advance and movie mode, a series of images or a clip of movie can be played by pressing the central button.

Press the right side of the zoom lever (3) to exit the index playback.



ENLARGED PLAYBACK

The images can be enlarged. For a series of continuous advance images and a movie clip, pause playback at the image you want to enlarge.



With the image to be magnified displayed, press the right side of the zoom lever (1) to enlarge. Pressing the right side of the zoom lever increases the image magnification. Pressing the left side of the zoom lever decreases the image magnification.



Use the left/right and up/down keys of the controller (2) to scroll the image.



You can save the enlarged portion of the image as a new single-frame image by pressing the shutter-release button (3).

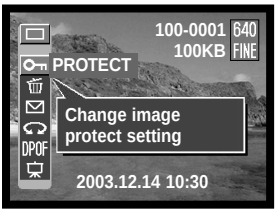
A movie clip cannot be played while enlarged.

NAVIGATING THE PLAYBACK MENU

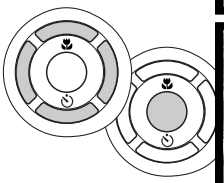
Navigating the menu is simple. The menu button turns the menu on and off. The left/right and up/down keys of the controller control the cursor and change settings on the menu. Pressing the central button of the controller selects menu options and sets adjustments.

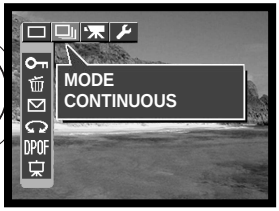
Turn the camera on and slide the mode switch to the playback position (p. 50). Press the menu button to activate the playback menu.





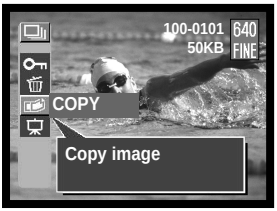
Using the up/down and left/right keys of the controller, highlight the desired drive mode at the top line of the menu options. Press the central button to set the drive mode.



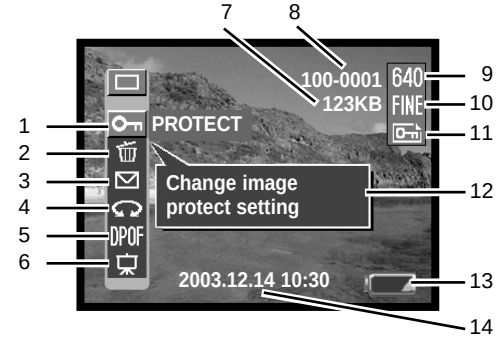


Press the menu button to display the playback menu in the desired drive mode. Use the up/down keys to highlight the desired menu option. Press the central button of the controller to select.

In the option setting display, using the up/down and left/right keys, change the settings. To select the settings and set the adjustments, press the central button.

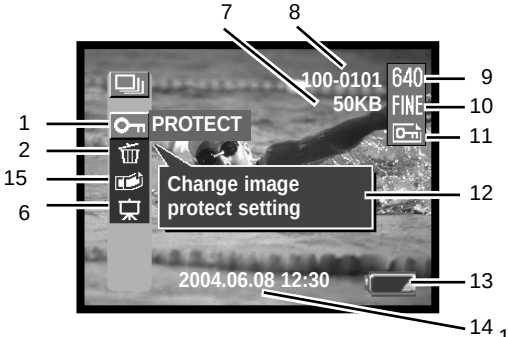


Single-frame advance

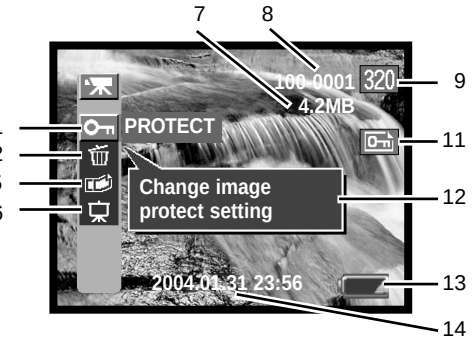


1 Protecting image files (p. 56)
2 Erasing image files (p. 57)
3 E-mail copy (p. 58)
4 Rotating an image (p. 59)
5 Creating a DPOF print order (p. 60)
6 Slide show (p. 62)
7 Actual file size
8 Folder-number-file number (p. 77)
9 Resolution display (p. 42)
10 Compression display (p. 42)
11 Protect indicator (p. 56)
12 Help display (p. 66)
13 Battery-condition indicator (p. 18)
14 Date and time of recording (p. 21)
15 Copying images (p. 63)

Continuous advance



Movie



PROTECTING IMAGE FILES

Important images should be protected. This function applies to single-frame advance images, an image in a continuous-advance series, and movie clips. A protected file cannot be erased in either the playback-mode menu functions or the instant playback. However, the reformatting function (p. 20) will erase all files on a memory card whether protected or not.

With the image to be protected displayed, press the menu button to display the playback menu. Use the up/down keys of the controller to highlight the protecting image files option. Press the central button of the controller. The “LOCK ?” screen appears.



Using the up/down keys, select “YES” and then press the central key. The image is protected and the indicator appears on the right side of the LCD monitor. Select “EXIT” to return the playback menu display.

To unlock the image file, select “YES” in the “UNLOCK?” screen and then press the central key. The image is unlocked and the indicator disappears. Select “EXIT” to return to the playback menu display.

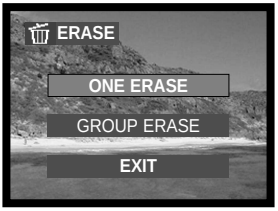


You can select another image by pressing the left/right keys in the “LOCK ?” or “UNLOCK ?” screen.

ERASING IMAGE FILES

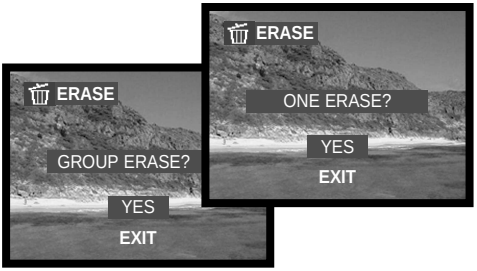
Erasing permanently deletes the file. Once erased, a file cannot be recovered. Care should be taken when erasing images.

Single or all files on the memory card can be erased. With the image to be erased displayed, press the menu button to display the playback menu. Use the up/down keys of the controller to highlight the erase image files option. Press the central button of the controller. The “ERASE” screen appears. The erase option has two settings:



One erase	A single-frame advance image, one image from a continuous-advance series, or a clip of movie will be erased.
Group erase	In the single-frame advance and movie mode, all unprotected files will be erased. In the continuous advance mode, the series of continuous-advance images displayed will be erased. Protected images will not be erased.

Using the up/down keys, select the desired setting and then press the central key. A confirmation screen will appear; choosing “YES” will execute the operation, “EXIT” will cancel the operation.



The erase function will only delete unprotected files. Protected files must be unprotected before they can be erased.

E-MAIL COPY

E-mail copy makes a standard 640 X 480 (VGA) or 160 X 120 (QVGA) JPEG copy of an original still image so that it may be easily transmitted by e-mail. If an economy image is selected for E-mail copy, the compression cannot change.

Copies of protected images are unprotected. DPOF information is not copied.

The amount of data that can be converted into E-mail copies depends on the free space remaining on the memory card and the image size of the copy.

With the image to be copied displayed, press the menu button to display the playback menu. Use the up/down keys of the controller to highlight the E-mail copy option. Press the central button of the controller. E-mail copy setting screen appears. Using the up/down keys to select the desired setting and then press the central button. A confirmation screen will appear.; choosing “YES” will execute the operation, “EXIT” will cancel the operation.



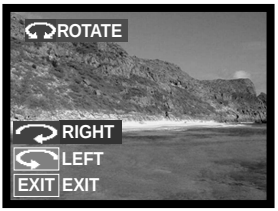
You can select another image by pressing the left/right keys in the “RESIZE ?” screen.



ROTATING AN IMAGE

The orientation of a single-frame image can be changed.

With the image to be rotated displayed, press the menu button to display the playback menu. Use the up/down keys of the controller to highlight rotating image option. Press the central button of the controller. Rotating image setting screen appears. Use the up/down keys to select the desired setting and then press the central button. Each time the central button is pressed, the image will be rotated 90° clockwise/ counterclockwise.



Protected images cannot be rotated.

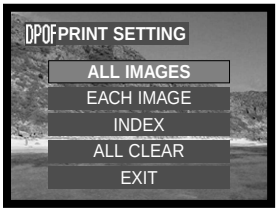
The next time you view the images, the images will be displayed in their changed rotation.

ABOUT DPOF

This camera is supported by DPOF™ version 1.1. DPOF (Digital Print Order Format) allows direct printing of still images from digital cameras. After the DPOF file is created, the memory card is simply taken to a photofinishing service or inserted into the memory-card slot of DPOF compatible printers. When a DPOF file is created, a misc. folder is automatically created on the memory card to store it (p. 77).

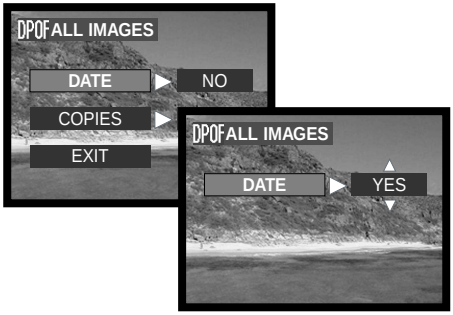
CREATING A DPOF PRINT ORDER

The DPOF-set menu option is used to create an order for standard prints from still images on the memory card. Single, multiple, or all images can be printed. The print menu option has four settings:

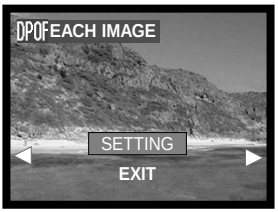


All images	To create a DPOF file for all images in the single-frame advance folder on the memory card.
Each image	To create a DPOF file for the displayed single-frame advance image.
Index	To create an index print of all the images in the single-frame advance folder on the card.
All clear	To delete the DPOF file.

When “All images” is chosen, highlight “SETTING” by using the up/down key and press the central button to make an order. A screen will appear asking for date imprinting and number of copies. Use the up/down and left/right keys of the controller to select date imprinting and adjust the required number of copies. A maximum of nine copies can be ordered. Press the central button to set. Any additional images recorded afterwards will not be included in the order.



When the “Each-image” setting is chosen, display the desired image to print by using left/right keys. Highlight “SETTING” by using the up/down keys and press the central button to make an order. A screen will appear asking if date imprinting is required and the number of copies. Use the up/down and left/right keys of the controller to select the date imprinting and to adjust the required number of copies. Press the central button to set.



Another way to create the each-image DPOF printing order is to press the DPOF button with the image to be copied displayed. Follow the procedure above to complete the operation.



When the index print setting is chosen, a confirmation screen will appear; select “YES.” to execute the operation, “NO” to cancel the operation.



If an index-print order is created, any additional images saved afterwards on the card will not be included in the index print. The number of images printed per sheet differs between printers. The information printed with the thumbnails can vary.

When the all-clear setting is chosen, the screen displaying the present print setting will appear. Confirm the setting and choose “YES” to delete the DPOF file, “NO” to cancel the operation.

After the pictures have been printed, the DPOF file will still remain on the memory card and must be canceled manually.

Rotated images will be printed in their original rotation.

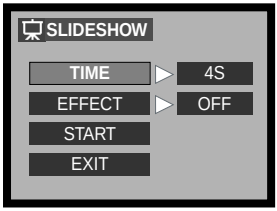
SLIDE SHOW

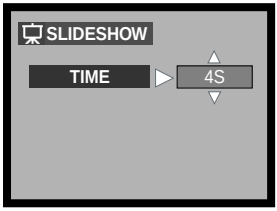
This function automatically displays all images in order in the single-frame advance, continuous advance, or movie folder on the memory card.

With the image to be presented first displayed, press the menu button to display the playback menu. Use the up/down keys of the controller to highlight slide show option.

In the single advance or continuous advance mode, you can select the display time and effect sitting by using the up/down and left/right keys. Press the central button to set.

Select “START” and then press the central button to start the slide show presentation.





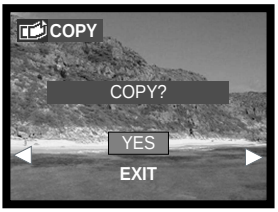
Pressing the shutter-release button with “START” selected, will start continuously repeating the slide show presentation for up to 12 hours. To cancel the presentation, press the menu button, or one of the keys of the controller.

COPYING IMAGES

This function makes a single-frame image copy from a series of continuous advance images or a clip of movie. The image is saved in the single-frame advance image folder.

With the image to be copied displayed, press the menu button to display the playback menu. Use the up/down keys of the controller to highlight copying image option. Press the central button of the controller. A confirmation screen will appear; choosing “YES” will execute the operation, “EXIT” will cancel the operation.

You can select another image by pressing the left/right keys in the “COPY ?” screen.



SETUP MODE

NAVIGATING THE SETUP MENU

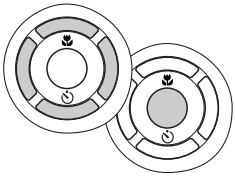
Navigating the menu is simple. The left/right and up/down keys of the controller control the cursor and change settings on the menu. Pressing the central button of the controller selects menu options and sets adjustments.

Turn the camera on. Press the menu button to activate the recording or playback menu.

MENU

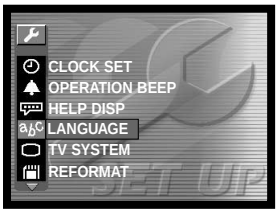


Using the up/down and left/right keys of the controller, highlight the setup mode on the top line of the menu options. Press the central button of the controller to display the setup mode.

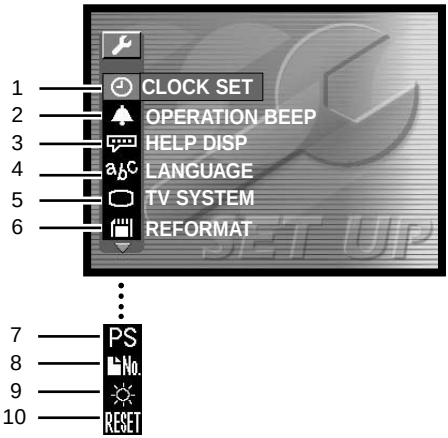




Use the up/down keys to highlight the menu option that needs to be changed. Press the central button.



In the option setting display, using the up/down and left/right keys, change the settings. To select the menu settings and set the adjustments, press the central button.



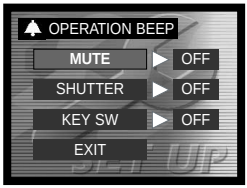
1 Setting the clock (p. 21, 26)
2 Operation beeps (p. 66)
3 Help display (p. 66)
4 Language (p. 19)
5 TV system (p. 67)
6 Reformatting a memory card (p. 20)
7 Auto power save (p. 67)*
8 File number reset (p. 68)*
9 LCD brightness (p. 68)*
10 Reset settings (p. 68)*

* Indicators are displayed when you press the down key of the controller to scroll down the screen.

SETTING THE CLOCK

It is important to accurately set the clock. When a recording is made, the date and time of the recording are saved with the file and are displayed in the playback mode or with the DiMAGE Viewer software included on the CD-ROM. See page 21 for how the set the date and time.
The date format that is used in the monitor displays and date imprinting can be changed: Y/M/D (year, month, day), M/D/Y (month, day, year), D/M/Y (day, month, year) and DISP OFF (no display in the playback mode).

OPERATION BEEPS



The operation beep gives a positive confirmation of camera operations. This option has three settings:

Mute	All the sound effects except the self-timer operation beep can be turned off.
Shutter	The operation beep confirms when the shutter-release button is pressed partway or all the way down when taking a picture.
Key switch	The operation beep confirms when a button or a key is pressed except the shutter-release button.

HELP DISPLAY

The help display appears when the recording or playback menu is displayed. Select “OFF” to turn off this setting.



LANGUAGE

The language used in the menus can be changed. See page 19 for how to select the language.

TV SYSTEM

Camera images can be displayed on a television (p. 69). The video output can be changed between NTSC and PAL. North America uses the NTSC standard and Europe uses the PAL standard. Check which standard is used in your region to play back images on your television set.

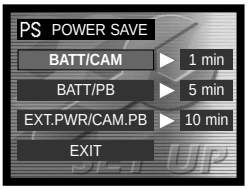


REFORMATTING A MEMORY CARD

Every memory card including the supplied card must be reformatted with this camera before use. See page 20 on how to reformat a card. When a memory card is reformatted, all data on the card is erased.

AUTO POWER SAVE

The length of the auto-power-save period can be changed. This option has three settings. When the camera is connected to a computer, auto power save does not work; the camera will shut down automatically after 12 hours.



BATT/ CAM	To set the auto-power-save period for the recording mode when using batteries.
BATT/ PB	To set the auto-power-save period for the playback mode when using batteries.
EXT.PWR/ CAM.PB	To set the auto-power-save period for both the recording and playback modes when using the AC adapter.

FILE NUMBER RESET

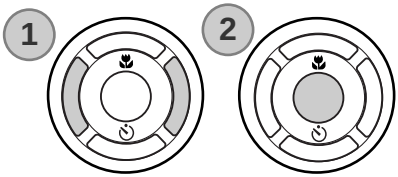
If file number reset is selected, when a new memory card is installed, the first file stored in the card will be 0001. If the file number reset is disabled, and the card is changed, the first file saved to the new card will have a number one greater than the last file saved on the previous card if the new card does not contain an image with a greater file number. If it does, the file number of the new image will be one greater than the greatest on the card.



LCD BRIGHTNESS

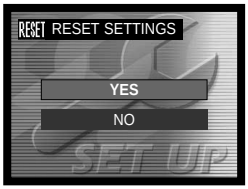
The brightness of the LCD monitor can be adjusted. Use the left/right keys of the controller (1) to adjust the brightness, the monitor image will change accordingly. Press the central button of the controller (2) to set the brightness level.





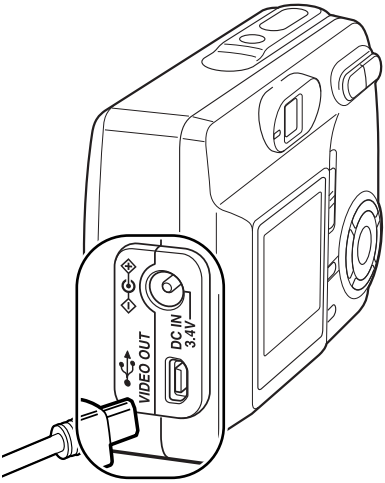
RESET SETTINGS

This function affects all modes. When selected, a confirmation screen will appear; choosing “YES” resets to the default settings, “N0” cancels the operation. The following settings will not change: clock/ language/ TV system.



VIEWING IMAGES ON A TELEVISION

It is possible to view camera images on your television. The camera has a video-out terminal to make the connection using the supplied video cable. The camera is compatible with the NTSC and PAL standards. The TV-system setting can be checked and set in the setup menu (p. 64).



1. Turn off the television and the camera.
2. Insert the small plug of the video cable into the camera.
3. Plug the other end of the video cable into the video input terminals on the television.
4. Turn the television on.
5. Change the television to the video channel.
6. Slide the mode switch to the playback position and turn the camera on. The camera's monitor will not activate when the camera is attached to a television. The playback-mode display will be visible on the television screen.
7. View images as described in the playback section.

DATA TRANSFER

Read this section carefully before connecting the camera to a computer. Details on using and installing the DiMAGE Viewer software are found in the supplied software manual. The DiMAGE manuals do not cover the basic operation of computers or their operating systems; please refer to the manual supplied with your computer.

SYSTEM REQUIREMENTS

For the camera to be connected directly to the computer and used as a mass-storage device, the computer must be equipped with a USB port as a standard interface. The computer and the operating system must be guaranteed by their manufacturers to support USB interface. The following operating systems are compatible with the camera:

IBM PC / AT Compatible	Macintosh
Windows 98, 98SE, Me, 2000 Professional, and XP (Home/Professional)	Mac OS 9.0 ~ 9.2.2 and Mac OS X 10.1.3 - 10.1.5, and 10.2.1 - 10.2.6.

Check the Minolta web site for the latest compatibility information:
North America: http://www.minoltausa.com
Europe: http://www.minoltasupport.com

Users with Windows 98 or 98 second edition will need to install the driver software on the included DiMAGE Viewer CD-ROM (p. 73). No special driver software is required for other Windows or Macintosh operating systems.

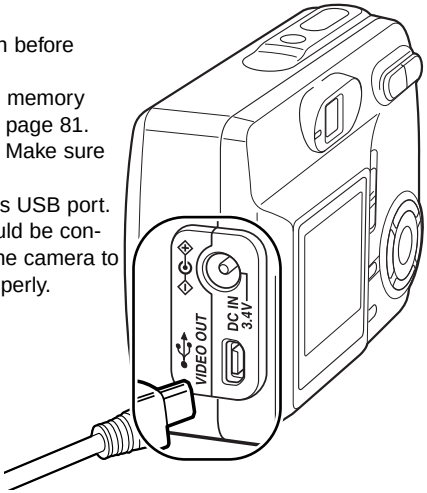
Customers who have bought a previous DiMAGE digital camera and have installed the Windows 98 driver software must repeat the installation procedure. The updated version of the driver software included on the supplied DiMAGE Viewer CD-ROM is required for the operation of the DiMAGE E323 with a computer. The new software will have no affect on the performance of older DiMAGE cameras.

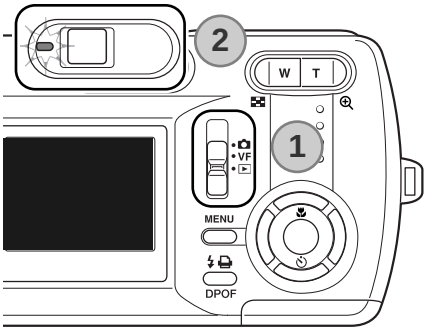
A remote camera driver is supplied in the Windows edition of the DiMAGE Viewer CD-ROM. This driver is not compatible with this camera.

CONNECTING THE CAMERA TO A COMPUTER

Fully charged batteries should be used when the camera is connected to a computer. The use of the AC adapter (sold separately) is recommended over the use of the batteries. For users with Windows 98 or 98SE, read the section on page 73 on how to install the necessary USB driver before connecting the camera to a computer.

1. Turn off the camera.
2. Start up the computer. The computer must be turned on before connecting the camera.
3. Insert the memory card into the camera. To change the memory card while the camera is connected to a computer, see page 81.
4. Insert the small plug of the USB cable into the camera. Make sure the plug is firmly attached.
5. Attach the other end of the USB cable to the computer's USB port. Make sure the plug is firmly attached. The camera should be connected directly to the computer's USB port. Attaching the camera to a USB hub may prevent the camera from operating properly.





6. Slide the mode switch to the playback position (1) and turn on the camera to initiate the USB connection. While the camera is connected to a computer, the camera's monitor will not activate, and the green indicator lamp will glow steadily.

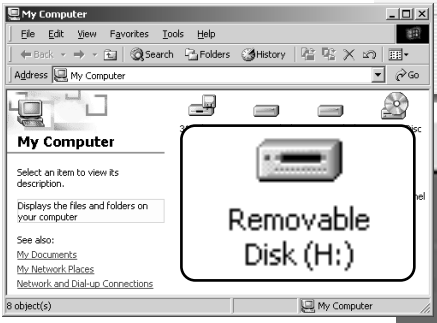


Windows XP

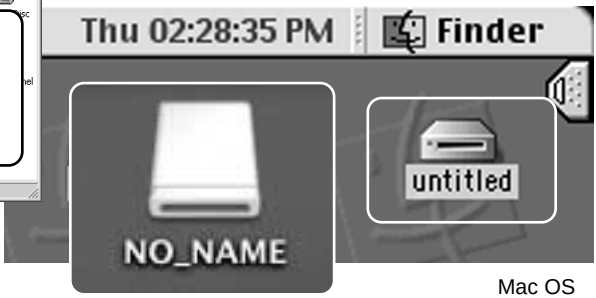
When the camera is properly connected to the computer, a drive icon, or volume, will appear. When using Windows XP or Mac OS X, a window will open requesting instructions on what to do with the image data; follow the directions in the window. If the computer does not recognize the camera, disconnect the camera and restart the computer. Repeat the connection procedure above. When a computer is accessing the memory card, the orange indicator lamp will blink.



Mac OS X



Windows



Mac OS

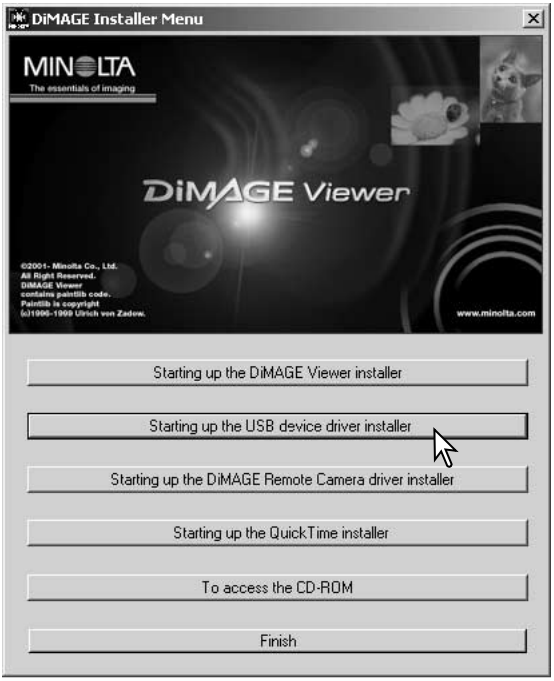
Mac OS X

The volume name varies between memory cards.

CONNECTING TO WINDOWS 98 AND 98SE

The driver needs only to be installed once. If the driver cannot be installed automatically, it can be installed manually with the operating system's add-new-hardware wizard; see the instructions on the following page. During installation, if the operating system requests the Windows 98 CD-ROM, insert it into the CD-ROM drive and follow the accompanying instructions on the screen. No special driver software is required for other Windows operating systems.

Automatic Installation



Before connecting the camera to the computer, place the DiMAGE Viewer CD-ROM in the CD-ROM drive. The DiMAGE installer menu should automatically activate. To automatically install the Windows 98 USB driver, click on the starting-up-the-USB-device-driver-installer button. A window will appear to confirm that the driver should be installed; click "Yes" to continue.



When the driver has been successfully installed, a window will appear. Click "OK." Restart the computer before connecting the camera (p. 71).

Manual installation

To install the Windows 98 driver manually, follow the instructions in the connecting-the-camera-to-a-computer section on page 71.

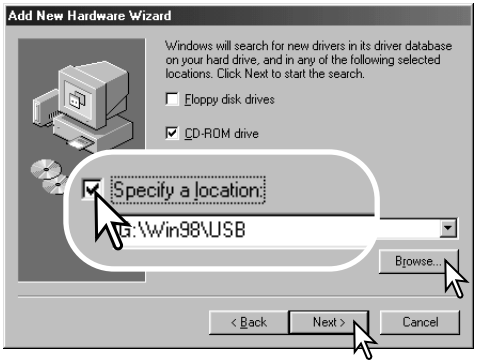
When the camera is plugged into the computer, the operating system will detect the new device and the add-new-hardware-wizard window will open. Place the DiMAGE Viewer CD-ROM in the CD-ROM drive. Click “Next.”





Choose the recommended search for a suitable driver. Click “Next.”

Choose to specify the location of the driver. The browse window can be used to indicate the driver location. The driver should be located in the CD-ROM drive at :\Win98\USB. When the location is shown in the window, click “Next.”

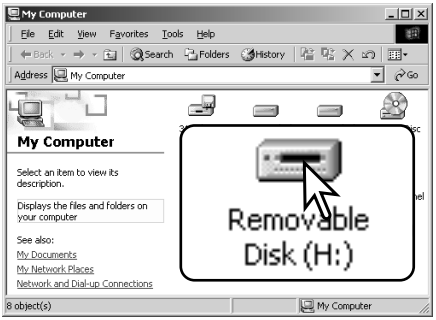




The add new hardware wizard will confirm the location of the driver. One of three drivers may be located: MNLVENUM.inf, USBPDR.inf, or USBSTRG.inf. The letter designating the CD-ROM drive will vary between computers. Click “Next” to install the driver in the system.



The last window will confirm the driver has been installed. Click “Finish” to close the add new hardware wizard. Restart the computer.



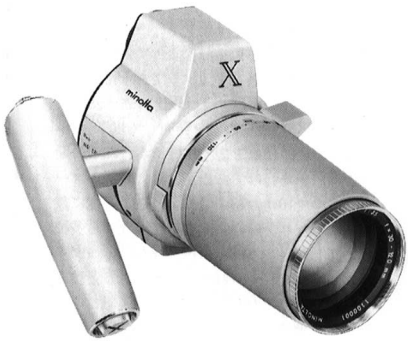
When the my-computer window is opened, a new removable-disk icon will be displayed. Double click on the icon to access the camera’s memory card; see page 77.

QUICKTIME SYSTEM REQUIREMENTS

IBM PC / AT Compatible
Pentium-based computer
Windows 95, 98, 98SE, NT, Me, 2000 Professional, or XP.
32MB or more of RAM
Sound Blaster or compatible sound card
DirectX 3.0 or later recommended

To install QuickTime, follow the instructions in the installer. Macintosh users can download the latest version of QuickTime free of charge from the Apple Computer web site: http://www.apple.com.

Minolta History



Innovation and creativity has always been a driving force behind Minolta products. The Electro-zoom X was purely an exercise in camera design. It was unveiled at Photokina in Germany in 1966.

The Electro-zoom X was an electronically controlled aperture-priority mechanical SLR with a built-in 30 - 120mm f/3.5 zoom lens giving twenty 12 X 17mm images on a roll of 16mm film. The shutter-release button and battery chamber are located in the grip. Only a few prototypes were built making it one of Minolta's rarest cameras.

MEMORY CARD FOLDER ORGANIZATION



Drive Icon

Once the camera is connected to the computer, image files can be accessed by double clicking on icons. Image folders are located in the DCIM folder. To copy images, simply drag and drop the file icon into a location in the computer.

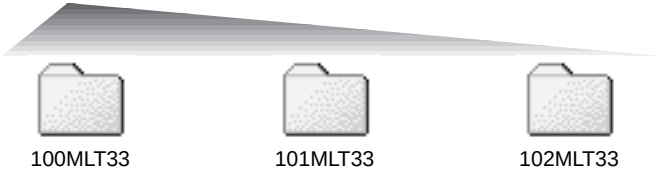
Files and folders on the memory card can be deleted using the computer. Never reformat the memory card from the computer; always use the camera to reformat the card. Only files recorded by the camera should be stored on the memory card.



Dcim

Misc

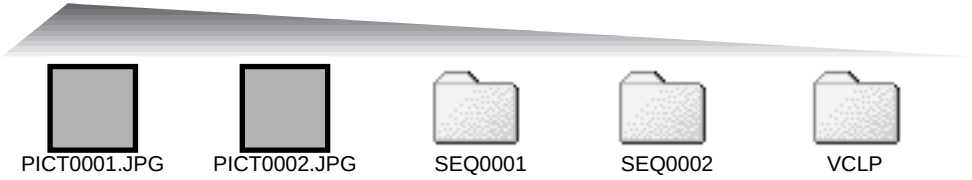
The misc. folder contains DPOF print files (p. 66).



100MLT33

101MLT33

102MLT33



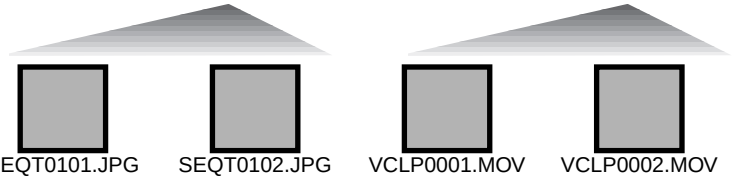
PICT0001.JPG

PICT0002.JPG

SEQ0001

SEQ0002

VCLP



SEQT0101.JPG

SEQT0102.JPG

VCLP0001.MOV

VCLP0002.MOV

An image in the continuous-advance series

Movie clip

The single-frame advance image file names begin with “PICT” followed by a four-digit file number and a jpg extension.

The continuous-advance image file names begin with “SEQT” followed by a four-digit file number and a jpg extension. Each series of the continuous advance image file is stored in the same folder. The folder names begin with “SEQ” followed by a four-digit number.

The movie clip file names begin with “VCLP” followed by a four-digit file number and a mov extension. They are stored in the folder named “VCLP”.

When the index number exceeds 999 for the single-frame image files, 99 for the continuous advance image files, or 999 for the the movie clip files, a new folder will be created with a number one greater than the greatest folder number on the memory card: e.g. from 100MLT33 to 101MLT33.

File serial numbers can be controlled with the file-number-reset function in the setup mode (p. 64).

Camera Notes

Image files contain Exif tag data. This data includes the time and date the image was recorded as well as the camera settings used. This data can be viewed with the camera or the DiMAGE Viewer software. If an image is opened in an image-processing application that does not support Exif tag data, and then the image is saved overwriting the original data, the Exif tag information will be erased. Some Exif compatible applications rewrite the Exif data preventing the DiMAGE Viewer from reading it. When using software other than the DiMAGE Viewer, always make a backup copy of the image files to protect the exif tag data.

To view images correctly on your computer, the monitor’s color space may need to be adjusted. Refer to your computer manual on how to calibrate the display to the following requirements: sRGB, with a color temperature of 6500K, and a gamma of 2.2. Changes made to the captured image with the camera’s contrast and color-saturation controls will affect any color-matching software in use.

DISCONNECTING THE CAMERA FROM A COMPUTER

Never disconnect the camera when the indicator lamp is orange - the data or memory card may permanently be damaged.

Windows 98 / 98 Second Edition

Confirm that the orange indicator lamp is not lit. Turn the camera off, and then disconnect the USB cable.

Windows Me, 2000 Professional, and XP



To disconnect the camera, click once on the unplug-or-eject-hardware icon located on the task bar. A small window will open indicating the device to be stopped.



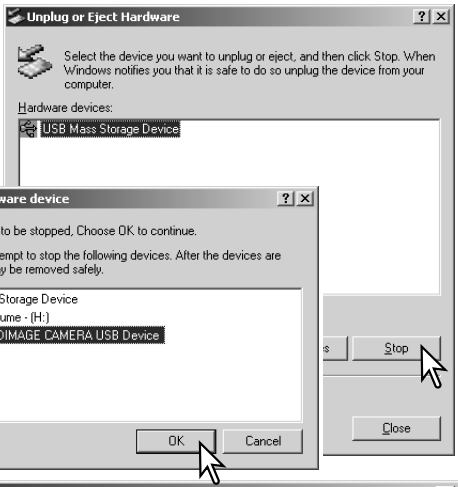
Click on the small window to stop the device. The safe-to-remove-hardware window will open. Close the window, turn the camera off, and then disconnect the USB cable.



When more than one external device is connected to the computer, repeat the procedure above except right click on the unplug-or-eject-hardware icon. This will open the unplug-or-eject-hardware window after clicking on the small window indicating the unplug-or-eject-hardware routine.



The hardware devices to be stopped will be displayed. Highlight the device by clicking on it then click “Stop.”



A confirmation screen will appear to indicate the devices to be stopped. Clicking “OK” will stop the device.

A third and final screen will appear to indicate the camera can be safely disconnected from the computer. Close the window, turn the camera off, and then disconnect the USB cable.





Macintosh

Confirm that the orange indicator lamp is not lit and then drag the mass-storage device icon and drop it into the trash. Turn the camera off, and then disconnect the USB cable.



CHANGING THE MEMORY CARD WHEN CONNCTED TO A COMPUTER



Never remove the card when the indicator lamp is orange - the data or memory card may permanently be damaged.

Windows 98 and 98 Second Edition

1. Turn off the camera.
2. Change the memory card.
3. Turn on the camera to remake the USB connection.

Windows ME, 2000 Professional, and XP

1. Stop the USB connection using the unplug-or-eject-hardware routine (p. 79).
2. Turn off the camera.
3. Change the memory card.
4. Turn on the camera to remake the USB connection.

Macintosh

1. Stop the USB connection by dragging the drive icon into the trash (p. 80).
2. Turn off the camera.
3. Change the memory card.
4. Turn on the camera to remake the USB connection.

APPENDIX

TROUBLESHOOTING

The section covers minor problems with basic camera operation. For major problems or damage, or if a problem continues to reoccur frequently, contact a Minolta service facility listed on the back cover of this manual.

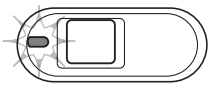
Problem	Symptom	Cause	Solution
The camera will not work.	Nothing displayed on the monitor.	The batteries are dead.	Replace batteries (p. 12).
		The auto-power-save function has turned the camera off.	Press the main switch or one of the buttons listed on page 18 to restore power. The length of the auto-power-save period can be changed in the setup mode.
		The AC adapter is not connected properly.	Check that the adapter is connected to the camera and a live electrical outlet (p. 14).
Shutter will not release.	"0" is displayed on the frame counter. The red indicator lamp glows steadily.	Memory card is full and unable to store an image at the compression or resolution setting on the camera.	Insert a new memory card (p. 15), erase some images (p. 57), or change the compression or resolution setting (p. 42).
	No-card warning appears on the monitors. The red indicator lamp blinks.	No memory card in the camera.	Insert a memory card (p. 15).

Problem	Symptom	Cause	Solution
Shutter will not release.	Card-locked warning appears on the monitor.	Memory card is locked.	Unlock the memory card using the write-protect switch (p. 16).
Pictures are not sharp.	The focus signal and/or focus frame did not appear when the shutter-release button was pressed partway down.	Subject is too close.	Make sure the subject is within the autofocus range (p. 26).
		A special situation is preventing the autofocus system from focusing (p. 29).	Use the focus-lock function to focus on an object at the same distance as the subject (p. 28).
	Pictures are taken indoors or in low-light situations without flash.	Slow shutter speeds result in blurred images when the camera is hand-held.	Use a tripod, or use the flash (p. 31).
While using flash, the pictures are too dark.	The subject is beyond the flash range (p. 32).		Move closer to the subject.
Subject appears too far to the right in the image.	Viewfinder was used for framing. Parallax is apparent with subjects closer than 1m (3ft.) at the zoom's wide-angle position or 3m (10ft) at the telephoto position.		Only use the LCD monitor for framing with close subjects.

Problem	Symptom	Cause	Solution
Part of the image area is hidden behind a dark object.	Viewfinder was used to capture the image.	The lens was partially covered with an object or finger.	When using the viewfinder, take care not to cover the lens.

If the camera does not function normally, turn it off, remove and reinsert the batteries, or unplug and reconnect the AC adapter. Always turn the camera off using the main switch otherwise the memory card may be damaged and camera settings reset.

VIEWFINDER INDICATOR LAMPS



The indicator lamp next to the viewfinder can be used to diagnose camera operations. The lamp colors change between green, red, and orange, and the lamp can glow steadily or blink.

Color	State	Indication
Green	Steady	Camera ready to take an image. Camera is connected to a computer.
	Blinking	The exposure-compensation function is activated. The digital-zoom function is activated. Auto-power-save function is activated.
Red	Steady	The memory card is full (the shutter cannot be released). The self-timer function is activated. Power is insufficient for camera operation.
	Blinking	The camera is starting up. A memory card is not inserted in the camera/ the memory card needs to be reformatted/ the memory card is locked (the shutter cannot be released). The flash is charging (the shutter cannot be released). The self-timer function is activated.
Orange	Blinking	The camera or computer is accessing the memory card.

REMOVING THE DRIVER SOFTWARE - WINDOWS

1. Insert a memory card in the camera and connect it to the computer with the USB cable. Other devices must not be connected to the computer during this procedure.

2. Right click on the My-computer icon. Select “properties” from the drop-down menu.

   Windows XP: from the start menu go to the control panel. Click on the performance and maintenance category. Click “System” to open the system properties window.

3. Windows 2000 and XP: select the hardware tab in the properties window and click the device-manager button.

   Windows 98 and Me: click the device-manager tab in the properties window.

4. The driver file will be located in the universal-serial-bus-controller or other-devices location of the device manager. Click on the locations to display the files. The driver should be indicated with the camera name. Under certain conditions, the driver name may not contain the camera name. However, the driver will be indicated by either a question mark or exclamation point.

5. Click on the driver to select it.

6. Windows 2000 and XP: click on the action button to display the drop-down menu. Select “uninstall.” A confirmation screen will appear. Clicking “Yes” will remove the driver from the system.

   Windows 98 and Me: click the remove button. A confirmation screen will appear. Clicking “Yes” will remove the driver from the system.

7. Disconnect the USB cable and turn off the camera. Restart the computer.

CARE AND STORAGE

Read this section in its entirety to get the best results from your camera. With proper care, your camera will provide years of service.

Camera care

- Do not subject the camera to shock or impact.
- Turn off the camera when transporting.
- This camera is neither waterproof nor splashproof. Inserting or removing batteries or the memory card, or operating the camera with wet hands may damage the camera.
- When at the beach or near water, take care not to expose the camera to water or sand. Water, sand, dust, or salt can damage the camera.
- Do not leave the camera under direct sunlight. Do not point the lens directly at the sun; the CCD may be damaged.

Cleaning

- If the camera or the outside of the lens is dirty, gently wipe it with a soft, clean, dry cloth. If the camera or lens comes in contact with sand, gently blow away loose particles. Wiping may scratch the surface.
- To clean the lens surface, first blow away any dust or sand, then gently wipe the lens with a cloth or tissue designed for optics. Use lens-cleaning fluid if necessary.
- Never use organic solvents to clean the camera.
- Never touch the lens surface with your fingers.

Storage

- Store in a cool, dry, well-ventilated area away from dust and chemicals. For long periods of disuse, store the camera in an airtight container with a silica-gel drying agent.
- Remove the batteries and memory card from the camera when not in use for extended periods.
- Do not store the camera in an area with naphthalene or mothballs.
- During long periods of storage, operate the camera occasionally. When taking the camera out of storage, check that the camera is functioning properly before using.

Memory cards

SD Memory Cards and MultiMediaCards are manufactured with precision electronic components. The following may cause data loss or damage:

- Improper use of the card.
- Bending, dropping, or subjecting the card to impact.
- Heat, moisture, and direct sunlight.
- Static electrical discharge or electromagnetic fields near the card.
- Removing the card or interrupting the power supply while the camera or a computer is accessing the card (reading, writing, reformatting, etc.).
- Touching the electrical contacts of the card with your fingers or metal objects.
- Using the card beyond its life. Purchasing a new card periodically may be necessary.

Minolta has no responsibility for any loss or damage to data. It is recommended that a copy of the card data be made.

Batteries

- Battery performance decreases with temperature. In cold environments, we recommend keeping spare batteries in a warm place, such as the inside of a coat. Batteries can recover their power when they warm up.
- If batteries have been exhausted after use in the camera, do not reload them even if their charge seems to recover over time. These batteries will interfere with normal camera operation.

Operating temperatures and conditions

- This camera has been designed for use in temperatures from 0°C to 40°C (32°F to 104°F).
- Never leave the camera exposed to extreme high temperatures, such as in a car parked in the sun, or to extreme humidity.
- When taking the camera from a cold to a warm environment, place it in a sealed plastic bag to prevent condensation from forming. Allow the camera to come to room temperature before removing it from the bag.

LCD monitor care

- Although the LCD monitor is manufactured using high precision technology, there may occasionally be a lack of color or bright points on the monitor.
- Do not apply pressure to the surface of the LCD monitor; it may be permanently damaged.
- In cold temperatures, the LCD monitor may become temporarily dark. When the camera warms up, the display will function normally.
- The LCD monitor may be slow to react in low temperatures or may turn dark in a hot environment. When the camera reaches normal operating temperature, the display will function normally.
- If fingerprints are on the LCD monitor surface, gently wipe with a soft, clean, dry cloth.

Before important events and journeys

- Check the camera's operation; take test pictures and purchase spare batteries.
- Minolta has no responsibility for any damage or loss incurred by equipment malfunction.

Copyright

- TV program, films, video tapes, photographs, and other materials may be copyrighted. Unauthorized recording or duplication of such material may be contrary to copyright laws. Taking pictures or images of performances, exhibitions, etc., is prohibited without approval and can infringe on copyright. Images protected by copyright can only be used under the provisions within the copyright laws.

Questions and service

- If you have questions about your camera, contact your local camera dealer or write to the Minolta distributor in your area.
- Before shipping your camera for repair, please contact a Minolta Service Facility.

TECHNICAL SPECIFICATIONS

Number of effective pixels:	3.2 million
CCD:	1/2.7-type interline primary-color CCD with a total of 3.3 million pixels.
Camera sensitivity (ISO):	Automatic (between ISO 50 - 200 equivalent)
Aspect ratio:	4:3
Lens construction:	7 elements in 6 groups.
Maximum aperture:	f/2.8 - f/4.9
Focal length:	5.6 - 16.8 mm (35mm equivalent: 36 - 108 mm)
Focusing range:	Wide: 0.11 m - infinity (from the front of the lens) Telephoto: 0.50 m - infinity
Autofocusing system:	Video AF
Shutter:	CCD electronic shutter plus mechanical shutter
Shutter speeds:	2 - 1/2000s
Built-in flash recycling time:	Approximately 6.5 seconds
Viewfinder:	Optical real-image zoom viewfinder
Monitor LCD:	4.0 cm TFT color
Monitor field of view:	Approximately 100%
A/D conversion:	10 bits
Recording media:	SD Memory Cards and MultiMediaCards
File formats:	JPEG, motion JPEG (MOV), DCF 1.0, DPOF, and Exif 2.2 compliant.
Print Image Matching:	Yes
Menu languages:	Japanese, English, German, French, Spanish, and Italian
Video output:	NTSC and PAL

Battery:	Two AA alkaline or Ni-MH batteries Or one CR-V3 lithium battery
Battery performance (recording):	Approximately 80 frames: based on Minolta's standard test method: alkaline batteries, LCD monitor on, 1600 X 1200 images, normal compression, no instant playback, flash used with 50% of the frames.
Battery performance (playback):	Approximate continuous playback time: 275 min. Based on Minolta's standard test method: alkaline batteries.
External power source:	AC adapter (AC-7 or AC-7E)
Dimensions:	99 (W) X 62 (H) X 34.5 (D) mm
Weight:	Approximately 145 g (without batteries or recording media)
Operating temperature:	0° - 40°C
Operating humidity:	30 - 90% (noncondensing)

Specifications are based on the latest information available at the time of printing and are subject to change without notice.

MINOLTA

We offer support for our digital products 24 hours per day on **www.minoltasupport.com**.

Camera know-how, image composition, digital image editing: discover more about Minolta's new internet world and visit **www.minoltaphotoworld.com**

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